ROY BENSON

PRECISION RUNNING

POLAR

PRECISION RUNNING
with your Polar Heart Rate Monitor

by
Coach Roy Benson, MPE

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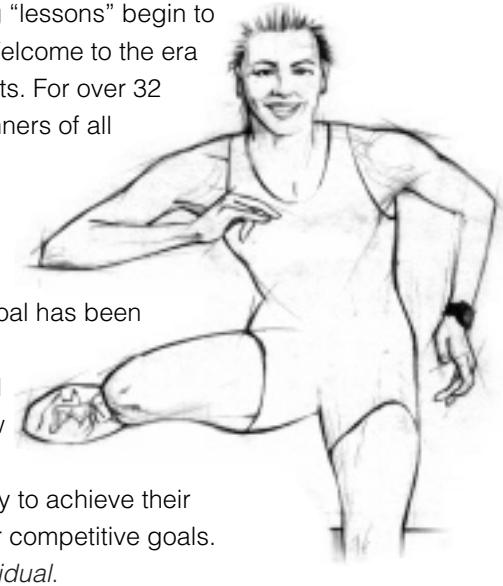
FOREWORD

Isn't it funny that no one ever "takes a lesson" to learn how to run? Running's easy, right? All you seem to need is a pair of running shoes, comfortable clothes, and the desire to do it.

But, if you're like most runners, you'll eventually want to know if your workouts are actually helping you meet your objectives. Are you pushing yourself too hard and risking injury? Or not hard enough? Would some other training pattern work better for you? At this point, running "lessons" begin to sound like a smart idea. Welcome to the era of smart, precision workouts. For over 32 years, I've worked with runners of all ages and levels of fitness. Whether they were recreational joggers, heart rehab patients, or competitive runners, my goal has been to help these runners understand their individual physical abilities and how to use them most effectively and scientifically to achieve their individual health, fitness or competitive goals. The key word here is *individual*.



Using a heart rate monitor enables you to reach these individual goals by training smart. Your heart is the most important muscle in your body. And your heart rate provides a constant report on your body and its environment. How hard or easy you are exercising, how fast you are using energy, how hot or cold it is, and many other factors are reflected in this single number. Heart rate monitoring allows you to get the most benefit from your Precision Running Program by tailoring your workouts to your precise condition and goals.

Now, though the lessons in this manual may put some of us running coaches out of business, that's okay if *you* benefit from smart, precision workouts. Thanks and happy trails.

Roy Benson, MPE

About the Author

Coach Roy Benson has been a track and distance running coach for over 32 years. Following a traditional coaching career that included 10 years at the University of Florida, he currently offers private coaching to adult runners of all ages and abilities—from elite competitors to beginning fitness runners. He has over 100 runners in his program in Atlanta and around the country. Coach Benson's Nike Running Camps attract over 1000 runners each summer in California, North Carolina, Washington and Vermont. Coach Benson is a contributing editor for *Running Times, Running Journal, Mastersport* and *Atlanta Sport and Fitness Magazine*. He is author of *The Runner's Coach, A Workout Workbook, a complete guide for competitive runners and coaches*.

CHAPTER ONE

The Concept of INDIVIDUALIZED training

Why do you run? To look fit? To feel good? To lose weight? To keep your heart healthy? To compete? And at what level? With what success?

This booklet has only one goal: to help you select the appropriate running workouts to achieve your personal fitness goals. It will help you understand how to achieve precision workouts geared to your individual physical abilities and goals through the use of Target Heart Rate Zones and personal Target Heart Rates.

Precision Workouts target individual goals and abilities.

Polar Precision Workouts are built on your unique physical abilities.

Unlike many running programs, Polar Precision Workouts measure not how fast or slow you run, but how HARD or EASY you run. Measuring your effort is important because your fitness levels change in response to the amount of exercise stress you put on your body. When you work hard enough to elevate your heart rate to somewhere between 60% and 100% of its maximum rate, certain changes in your fitness level are guaranteed to happen. If, for example, we all workout at our own different speeds, but at exactly 60% effort, we all have the same conditioning response: we develop muscular endurance. In other words, it's whatever EFFORT you make, not just the time it takes you, that counts. Monitoring your heart rate precisely measures your individual effort.

Heart rate monitors make precision workouts possible.

Until a few years ago, basing workouts on the science of cardiac response to exercise wasn't practical because runners were not going to stop in the middle of every workout to count their pulses. Now Polar's affordable, accurate, wireless heart rate monitors make it easy to measure effort and use that feedback to structure precision workouts.

Why precision running with a heart rate monitor is for everyone.

For too long, too many Americans thought that exercising should be confined to P.E. class and serious athletes. But the American public's attitude about exercise has matured. We now realize that exercise is for everyone. Maintaining or improving the strength of the heart is the most important reason to maintain fitness. Fortunately, it's an easy goal to achieve because the heart is a muscle and responds to regular exercise. Other goals include losing weight, maintaining a fit appearance or running competitively. Different goals and different levels of effort are okay. And heart rate monitoring provides a safe, efficient way to achieve these individual goals.

Next steps.

Before you strap on the monitor and take off down the street, you need to set some goals and learn how to best use your electronic coach.

CHAPTER TWO

Individualizing your reasons to WORKOUT

The first job of any good coach is to select challenging, yet reasonable, goals.

Luckily, we have finally realized that not every runner needs to belong to the PTA—Pain, Torture, and Agony Club. Different runners should ask different questions like:

1. What's the best workout for losing weight? For controlling weight?
2. What's the best workout for feeling fit and energetic?
3. What's the best way to look good?
4. What's the best workout for a healthy heart?
5. What's the best way just to finish a 10K or a marathon with a smile still on my face?
6. What's the best way to win an Olympic medal in the 5K?

New answers for old questions

Research in Exercise Science has shown that runners asking these questions usually want to achieve one or more of three general goals:

1. To "get fit" and maintain an attractive appearance.
2. To maintain a healthy heart.
3. To get in athletic condition for peak performance.

Achieving each of these objectives takes a different level of effort during training. To feel and look fit, for instance, you don't have to work as hard as you do to run a good time in a 10K.

Reaching goals by training using Target Heart Rate Zones

But how can you be sure that your actual workouts are helping you achieve your objectives? That's where Precision Target Heart Rate training comes in. The levels of effort you need to reach each objective can be represented by various percentages of your maximum heart rate. These various percentages have been divided into categories called Target Heart Rate Zones that correspond to the three general goals for running:

TARGET HEART RATE ZONES:	
50-60%	Light Intensity e.g. Daily Activity
60-70%	Light to Moderate Intensity e.g. Weight Management
70-85%	Moderate Intensity e.g. Improved Fitness
85-100%	Heavy Intensity e.g. Competitive Training

What are your goals for running?

As you consider how these goals fit your personal objectives, keep in mind that the goals are not mutually exclusive. In fact, they are incremental. You can progress as far as you like. You can build on what you've already achieved.

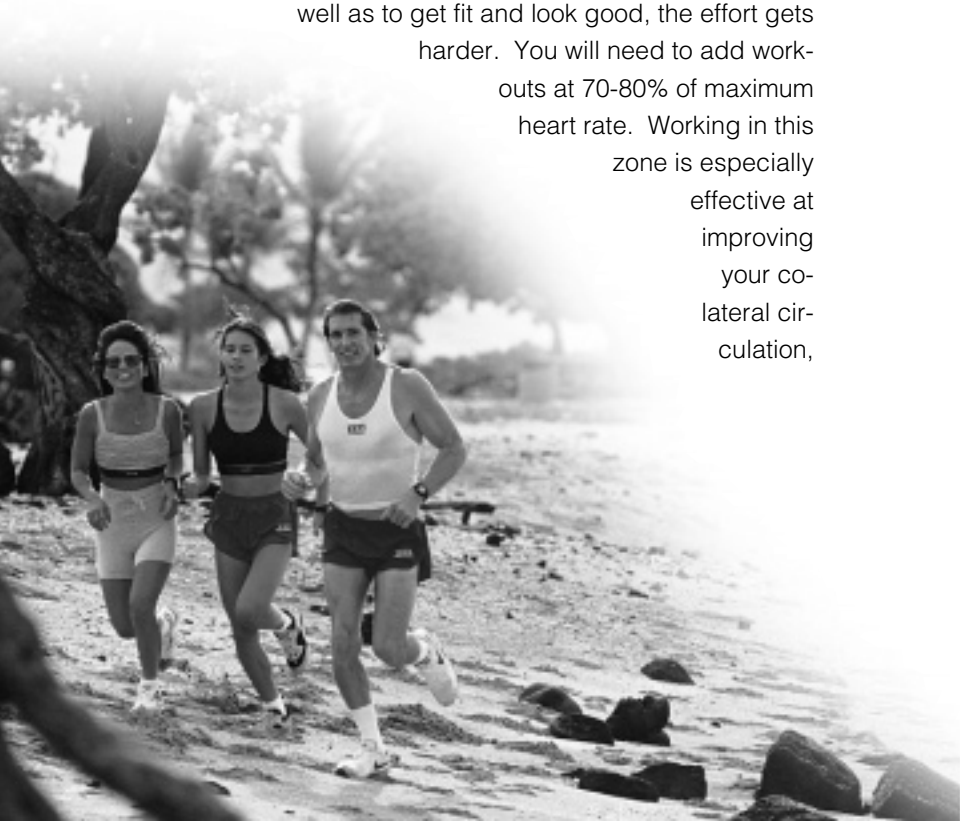
Running for a Fit Appearance (Weight Management)

If your goal is to get fit and improve your appearance, you will need to work out in the 60-70% of Maximum Heart Rate Zone. This zone is the most effective for losing and controlling weight and for modest toning up. You'll also be taking the first steps to a healthy heart. In addition, runners aiming for competition will start building their endurance base in this zone. Endurance is the capacity for getting to the end of your workout, no matter how much you have to slow down, *without walking*.

The pattern of training in this zone features easy, highly aerobic runs. At this level, progress in how you feel and in endurance comes in short steps, not leaps and bounds. So relax and take it easy.

Running for a Healthy Heart (Aerobic Training)

If your goal is to fully develop a completely healthy heart, as well as to get fit and look good, the effort gets harder. You will need to add workouts at 70-80% of maximum heart rate. Working in this zone is especially effective at improving your collateral circulation, which means increasing the number of blood vessels servicing the heart and other working muscles. Potential competitors will also build stamina, the capacity for getting where you want *without slowing down*. Runners who choose to stay at this level often enjoy running road races, but more for fun than competition.



The pattern of training in this zone substitutes a couple of harder runs per week for the easier aerobic workouts featured in the first zone.

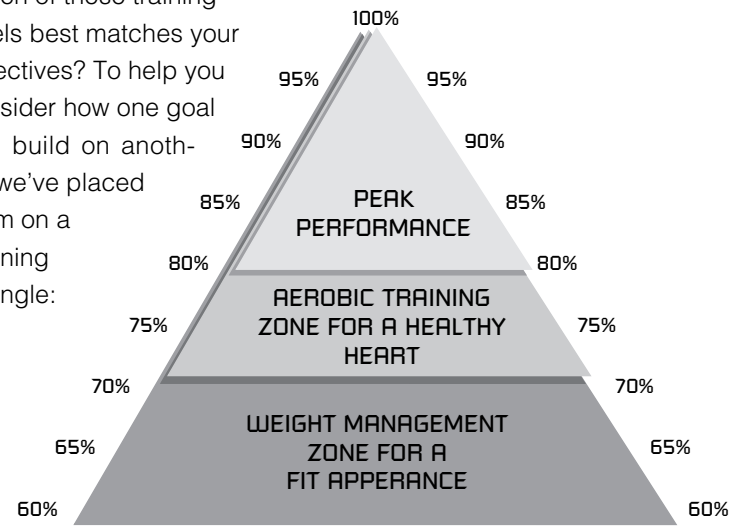
Running competitively

If your goal is to compete at your top potential, then you will have to add workouts at 80-100% of maximum heart rate. By the time you reach this level, you're going to have a healthy heart and look fit. Runners at this level are full of speed, endurance and stamina, and they possess greatly developed economy of motion at race pace. They can reach those personal record goals they set and can be competitive with any one near them at the finish line.

The pattern of training in this zone is designed to bring the runner to peak performance.

Choosing a place to begin

Which of these training levels best matches your objectives? To help you consider how one goal can build on another, we've placed them on a Training Triangle:



Individualizing Your TARGET HEART RATES

To use your Polar Heart Rate Monitor effectively, you must know how to determine your specific target heart rates and how to correlate them with your Precision workouts.

If your goal for the day's run is to achieve a 60% to 70% level of maximum heart rate, for example, in what range should you keep your heart beats per minute? For you, the answer might be 140-150 beats per minute (bpm) but for your running partner, who's your same age, only 132-145 bpm. Why the difference? Perhaps, he's fitter, or has a lower maximum heart rate.

To help you target your training heart rates more accurately without a lot of math, we have designed a *Training Heart Rate Calculator* that takes your fitness level into account. Methods that use only your actual or predicted maximum heart rate can penalize fitter runners, whose hearts work more efficiently, and go too easy on beginning runners.

To use the *Calculator* you need to know two things first: 1) your resting heart rate, and 2) your maximum heart rate, actual or predicted.

Determining your Resting Heart Rate

Your resting heart rate (RHR) indicates your basic fitness level very accurately. The more well-conditioned your body, the less effort and fewer beats per minute it takes your heart to pump blood to your body.

To determine your resting heart rate put on your monitor upon awakening in the morning for five days in a row and then average the readings you get.

RESTING HEART RATE		
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Total	÷ 5 =	RHR

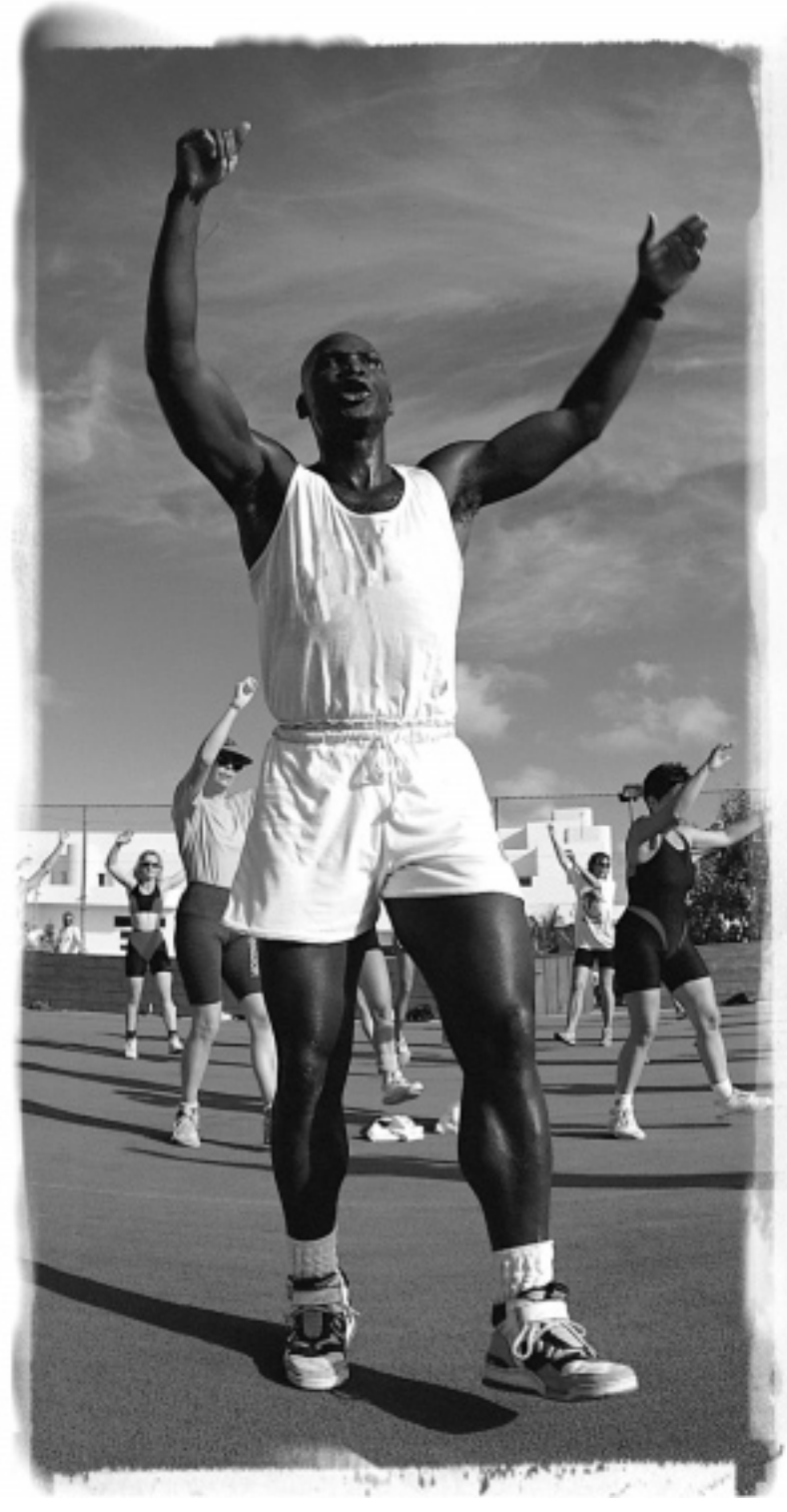
Determining Your Maximum Heart Rate

What is your "drop-dead-from-exhaustion-at-the-finish-line" maximum heart rate? There are two ways to determine your rate: 1) Have it tested by a cardiologist or trained technician. 2) Use your predicted maximum heart rate.

1. Testing to determine your Maximum Heart Rate. The most accurate way to determine your individual maximum heart rate is to have it clinically tested (usually by treadmill stress testing) by a cardiologist or trained technician, who knows how to administer a true maximal stress test. Alternatively, have it tested by time trials supervised by a trained coach or exercise physiologist. For some people, including the 5 to 10% of the population whose maximum heart rates are above or below average predictions by as much as 12 to 24 beats per minute, testing may be worth the money it costs.

2. Using Predicted Maximum Heart Rates. Most adults who are just starting to jog will find their average predicted maximum heart rate adequate for training. To determine your predicted maximum heart rate, use the Training Heart Rate Calculator below. Find your age on the outside of the right hand axis. The number opposite your age on the inside of that axis is your Predicted Maximum Heart Rate.

Since research has shown that the commonly used formula for predicting maximum heart rates (220 minus your age) is not very accurate for older persons or the chronically fit, this calculator has been developed to provide greater accuracy. It incorporates research findings from such new studies as those by Hakki, Leger, Pollock, Blair and Kaminsky and the Ball State study of over 2000 subjects.

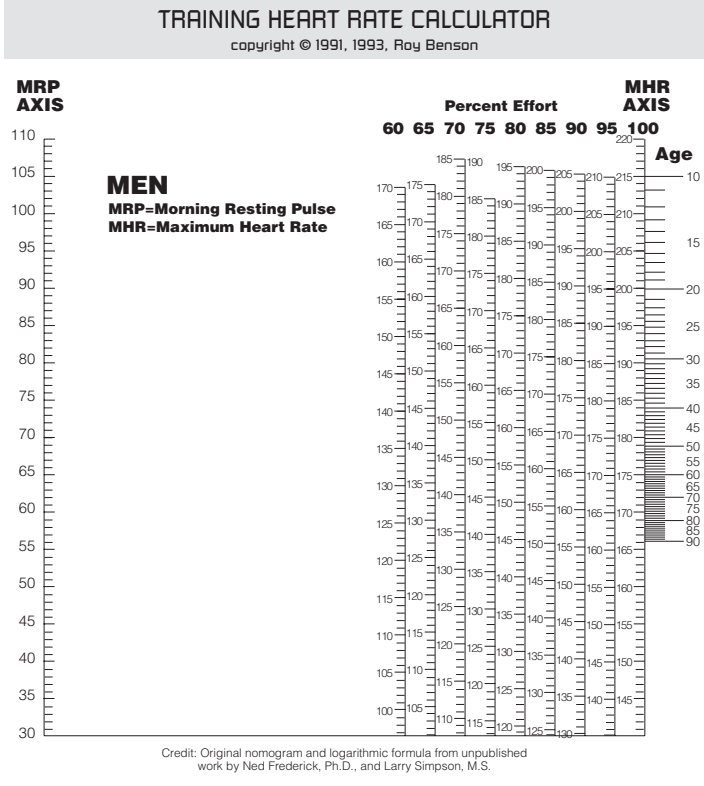


How to Use the Training Heart Rate Calculator

First, take a look at either chart.

On the far left is an axis labeled “MRP Axis" representing morning resting pulse (heart beat). On the far right is the "MHR Axis" representing “Maximum Heart Rate”; it’s been adjusted by age for those using predicted maximums. The percentages shown on the vertical axes in the middle of the chart refer to standard Karvonen Intensity Levels and represent the levels of effort recommended in this guide.

To find your individual Target Heart Rates for various levels, draw a line between your morning resting heart rate on the left axis and your age or actual maximum heart rate on the right. Where the line crosses the appropriate intensity axis is the approximate heart rate you should target for a workout requiring that intensity level.

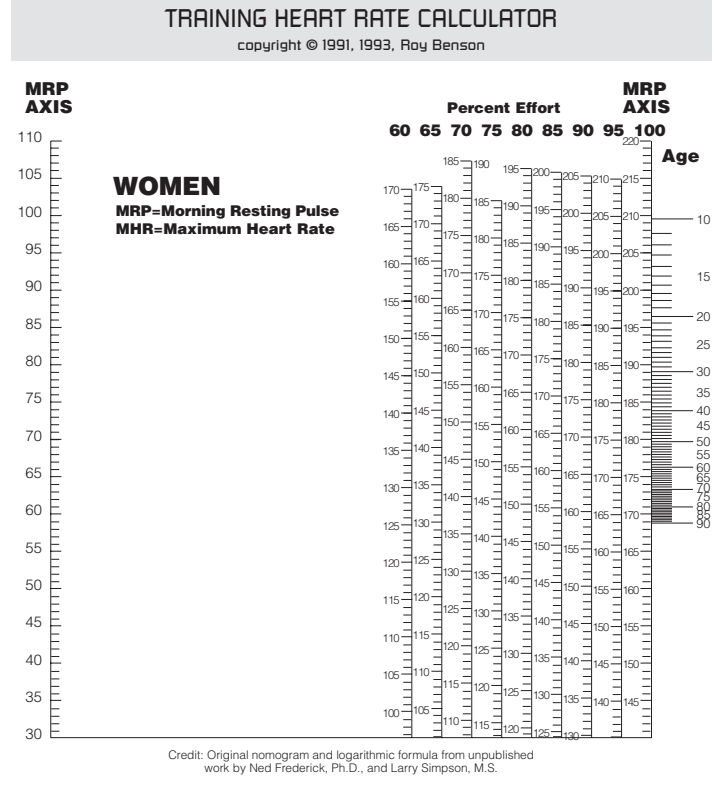


Credit: Original nomogram and logarithmic formula from unpublished work by Ned Frederick, Ph.D., and Larry Simpson, M.S.

Example: As a man, your resting heart rate is 70 bpm and, at age 25 your predicted maximum is 195 bpm. You want to workout at a 60-65% effort. Draw a line from 70 on the left to 195 on the right. It crosses the 60% effort axis at 145 beats per minute, the 65% effort axis at 151 beats per minute. To train at a 60-65% effort, your Target Heart Rate zone is 145 -151 beats per minute. Easy.

Use the Calculator to determine your Target Heart Rate zones for the Precision Workouts in Chapters 4-6.

How can you tell if the predicted rates are accurate for you? If, during your workouts, you seem to be working much too hard or not nearly hard enough to reach your target zones, then you probably are. Turn to Chapter Eight and use the Pace & Effort backup test there to check. Or better yet, get a maximal stress test to eliminate the guessing.



Credit: Original nomogram and logarithmic formula from unpublished work by Ned Frederick, Ph.D., and Larry Simpson, M.S.

CHAPTER FOUR

Introducing Precision

WORKOUTS for Runners

The hard/easy principle of Precision Workouts

In every training program, there are four criteria for designing the workouts:

- how hard you will work out
- how long it will take
- how often you will do it
- what type of activity you want to do

To meet these criteria, there are three basic types of running workouts: easy effort runs, moderate effort runs, and hard effort runs. As measured by Target Heart Rates, easy runs fall into the 60-75% effort zone, moderate ones are in the 75-85% effort zone and hard ones are in the 85-95% effort zone.

Distance, speed, and effort can be combined in various ways to make workouts hard, moderate or easy. The thing to remember is that runners need to follow a training pattern of hard/easy workouts. By giving the body a low stress day after a high stress day, "getting in shape" can take place with little risk of the injuries or illnesses associated with overtraining.

How you put these components together over a week becomes your *training pattern*.

Which Precision Workout Pattern should you choose to start?

If you're just beginning to run, then start with the Precision Workouts in Chapter 4. But if you've been running a while, read through the various programs, then try the one that most nearly matches your current workout level. If the training pattern seems too hard, back up. If it seems too easy, advance. But remember, it's better to start slow and advance, than overdo it and risk setbacks or injury. Move from one goal level to the next in the same way.

Adapting the sample Precision Workouts to your schedule

Though you may switch the days around to accommodate your individual schedule, follow the hard/easy principle and avoid putting moderate and/or hard days back to back more often than just very occasionally. Always, always have easy, recovery days separating your other workouts. Feel free, too, to modify the intensity or length of a workout. For example, to change a day from hard to easy, you could shorten the amount of time that you run fast, decrease the percentage of effort at the upper end of your zone, or just change the whole workout to a moderate one. Temporary changes in your weekly pattern will not lead to chronic under- or overtraining as long as you come back to the original hard/easy pattern within a week or two.

The secret of individualized Precision Workouts

What makes these workouts unique is that they are based on your individual standard of 100% effort. You will measure your effort by how hard or easy it is for you, not by how fast or slow you run compared to some external standard. Forget the stop watch for now. Run with your heart (rate) on your sleeve. As our friends at Polar like to say, "Just count it!"

CHAPTER FIVE

Precision Workouts for achieving A FIT APPEARANCE AND WEIGHT MANAGEMENT

These workouts are for runners who want primarily to control weight, to be modestly fit, and to present a fit appearance. To help beginning runners, the training pattern outlined at the end of this chapter increases the days you run each week gradually from three to five.

SLOW, EASY SHORT RUNS (1)
MONDAY WEDNESDAY FRIDAY

These are easy runs of shorter distance to ensure recovery and to minimize injury risks. The time range gives suggestions for beginners (shorter time) and veterans (longer time). You fill in your Target Heart Rates in the blanks by using the Heart Rate Calculator from Chapter Three.

> Jog 20 to 30 minutes at 60 to 70% effort. Your Target Heart Rate zone will be from _____ to _____ beats per minute.

Don't worry about your pace. Just get your heart rate up into the target zone and maintain a pace that keeps it between the upper and lower numbers.

After the workout, stretch your quads, calves, and hamstrings. They'll be a little tight from the short range of motion used at this easy pace and will need loosening up to avoid becoming chronically inflexible. With its easy starting pace, the workout itself is your warm-up. In fact, stretching a cold muscle before jogging is more likely to strain it than just jogging.

When you wish to take a day off, these are the days to omit.

SLOW MODERATE RUNS (2)
TUESDAY THURSDAY

These are harder runs because you're going out long enough to really burn up some fat calories.

> Jog 30 to 45 minutes at 60 to 70% effort. Your Target Heart Rate zone will be from _____ to _____ beats per minute.

Follow the post-workout stretching routine outlined above.

HARD FAST RUNS—FARTLEK (3)
SATURDAY

This is a special workout offered as a reward for trudging through the week—you get to run real fast and never get tired. You don't tire because you stop running as soon as you reach the upper limit of your targeted heart rate. Then you walk or jog very slowly until you recover from all the excitement, dropping to your lower limit.

> Start by jogging one mile at 60% effort. Then include 1 to 2 miles of HEART RATE FARTLEK at 60 to 75% effort. Your Target Heart Rate zone will be _____ to _____ beats per minute.

"Fartlek" is a Swedish word that means "speed play" and that's what you should be doing: shifting your running gears enough to get your heart rate up to 75% and then slowing down greatly to allow it to come back down to 60%. Think "roller coaster." This frequent changing of pace builds up your leg strength and improves your flexibility by forcing you through a greater range of motion.

HARD LONG RUNS (4)
SUNDAY

This is your longest run of the week. There's nothing sexy about this one: you've just got to slog it out to the finish.

> Jog for 45 to 60 minutes at 60 to 70% effort. Your Target Heart Rate zone will be _____ to _____beats per minute.

Be sure to do your stretches afterwards.

Training Patterns for Precision Workouts

Here are these runs in a weekly training pattern. The numbers in the chart match those identifying the runs above. Start with the 3-day pattern; move up a level when your current level feels too easy.

Days Run per week	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Run 3 days	off	#2	off	#3	off	#4	off
Run 4 days	off	#2	off	#3	off	#1	#4
Run 5 days	off	#2	#1	#3	off	#1	#4

If you wish to run more than five days per week, substitute Slow, Easy Short Runs (#1) for off days.

Precision Workouts for AEROBIC TRAINING AND A HEALTHY HEART

These workouts are for runners who want to achieve a totally healthy heart and cardiovascular system as well as be in shape to enter an occasional race. You'll be running at least five days a week and working a little harder. Continue incorporating all the advice about the total workouts given in the previous chapter. For example, don't forget to stretch after slow runs.

SLOW, EASY SHORT RUNS (1)
MONDAY WEDNESDAY FRIDAY

These are the easier days of slower distance to ensure recovery from and to rest up for the harder, faster days.

> Jog 20 to 40 minutes at 60 to 65% effort. Your Target Heart Rate zone will be from _____ to _____beats per minute.

Don't worry if this effort is so easy that your pace is rather bio-mechanically uncomfortable. Going really easy takes a slow pace, and you will get used to it.

HARD FAST RUNS—FARTLEK (3)
TUESDAY THURSDAY

These are harder days designed to get you huffing and puffing right at your anaerobic (without oxygen) threshold. Use the same Fartlek technique outlined in chapter 4.

> Warm up by jogging a mile at 60%. Then include 2 to 3 miles of Heart Rate Fartlek at 70 to 85% effort. Your Target Heart Rate zone will be _____ to _____ beats per minute.

Be creative. Take several minutes to elevate your heart rate to the 85% level, or run as hard as you can to get it up there as fast as possible. Get your heart rate back down to 70% by walking, jogging, or running slower. Your pace will dictate how long it takes you to recover. Use hills to elevate your heart rate just like changes in pace.

STEADY MODERATE RUNS (5)
SATURDAY

Enjoy a nice steady-state run. This is the type pace that everyone, if left alone without a coach pushing them, will almost automatically drift into during the body of their workout.

> Jog several minutes at 60% effort to warm up. Then run steady for 20 to 30 minutes at 75 to 80% effort. Your Target Heart Rate zone will be _____ to _____ beats per minute.

This pace is bio-mechanically comfortable, and your breathing rate matches your oxygen consumption. Enjoy. You will probably find the elusive runner's high in this Target Heart Rate zone.

HARD LONG RUNS (4)
SUNDAY

This run is exactly the same as at the previous level—just slog it out.

> Jog from 45 to 60 minutes at 60 to 70% effort. Your Target Heart Rate zone will be _____ to _____ beats per minute.

Be sure to stretch afterwards.

Training toward road races

Following this pattern will get you in pretty good shape for running road races. The 80-85% zone is the typical effort that a runner makes over the first 3 miles of a 10K race. Hitting those targets a couple of workouts per week will get you ready to finish your chosen distance—whether in races or just workouts—with a pretty fair smile on your face. Sure, you may have to slow down a little near the end, but not too much.

Chart of Training Pattern

Days Run per week	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Run 5 days	off	#3	#1	#3	off	#5	#4

If you wish to run more than five days per week, substitute Slow, Easy Short Runs (#1) for off days.

CHAPTER SEVEN

Precision Workouts for COMPETITIVE RUNNERS

For folks who like life at the top of the pyramid, these workouts will help you reach your potential as a competitive runner. But be advised that success also takes discipline, focus, sacrifice, and planning.

• **Discipline.** You absolutely must discipline yourself to run slow on your easy days and then to do the stretching and strides that balance your mechanics afterwards.

• **Focus.** It is crucial that you focus your energy on your running and not on solving more of life's little problems than usual if you hope to set Personal Records.

• **Sacrifice.** To save even more energy for those critical workouts and races, you better be willing to sacrifice the booze, rich meals, and late nights at the parties. It's not a coincidence that success and sacrifice share the same first letter.

• **Planning.** Finally, to reach your full potential every season, you need to write out a training plan and racing schedule that will carry you through the full 4 Phases of Training. Since the details of such a plan are outside the scope of this manual, the training plan presented below features workouts typical of the third phase of training, the competitive season.

SLOW EASY RUNS (1)
MONDAY WEDNESDAY FRIDAY

These are the super critical RECOVERY days featuring low-effort, fat-burner runs that allow the carbos you eat to be converted into muscle glycogen instead of being burned during an unnecessarily fast workout. Discipline yourself to stay under your upper Target Heart Rate limit, and you'll be rewarded the next day with the freshest legs in town.

Jog easily for 30 to 45 minutes at 60 to 65% effort. Your Target Heart Rate zone will be from _____ to _____beats per minute.

Stretch your hamstrings, quads, and calves after these runs. Then run several 10 to 15 second "strides" at a fast, but not sprint, pace to help put some flexibility, strength and co-ordination back into your legs. After each stride, walk back to recover.

INTERVAL TRAINING RUNS (6)
TUESDAY

There is no substitute for old-fashioned interval training so get thee to a track and prepare for some serious speed work by getting a super good warm up of jogging, stretching and strides.

Then run 10 to 12 repeats of 400 meters at 90 to 95% effort with a 200-meter jog recovery interval between repeats to allow your heart rate to drop to at least 70% effort.
Your Target Heart Rate zone at the end of each repeat 400m will be _____ to _____ beats per minute, and your Target Heart Rate should be below _____beats per minute by the end of your recovery interval jogging.

The experienced runner may find these interval efforts more "user-friendly" than expected. If so, be assured that it is not necessary to go all-out in practice; only races require a 100% effort. Don't leave your best times on the practice track by trying to win workouts!

If you find that you have an amazing amount of energy left near the end of this workout, reward yourself for staying on the right effort level by accelerating over the last 200 meters of the last two 400s to see how much faster you can run when you really try. Not only will this boost your confidence, it will teach you how to pace yourself and condition you to really kick at the end of your races.

Warm down with 1/2 to 1 mile of easy jogging at 60% effort. Stretching and strides are not necessary because you ran so fast during practice that your legs were close to full range of motion.

HARD FAST RUNS—FARTLEK (3)
THURSDAYS

If you plan to race on the coming Saturday, just do half the workout.

After another full warm up, run 2 to 3 miles of hilly, heart rate Fartlek at 70 to 85% effort. Your Target Heart Rate zone will be _____ to _____beats per minute.

Concentrate on shorter, faster pickups that allow your legs to stretch out. Hit the hills right away to get your heart rate up to 85% quickly. Once you're tired from riding the roller coaster up to your 85% limit several times, it won't take so long to reach that limit. Then faster running on level ground will produce the desired fast rate of leg turnover as you push your heart rate up to the target 85%.

TEMPO RUNS (7)
SATURDAY

If you're not racing, you'll go for an Anaerobic Threshold Run. This workout pace is often referred to as a Tempo Run or a hammer run. Recent research has shown us that this run need not be as hard and long as formerly believed.

Start out at a warm-up pace for 1 to 1 1/2 miles, then include 15 to 20 minutes at exactly 85% effort. Your Target Heart Rate will be _____ beats per minute.

Any time your heart rate exceeds 85%, you must back off the pace a little in order to keep the 85% effort constant.

Soon after the workout is over, you'll feel pleasantly pumped up, not exhausted and dead-legged like after an interval workout. The next day you'll feel great, too, not sore or tight like after a race or an overly ambitious speed workout.

EASY LONG RUNS (8)
SUNDAY

It's another slow, easy distance run. Keep in mind that you're just trying to maintain your endurance at this point, not build it. To do so, one long run every other week will suffice. If you raced yesterday, aid your recovery by going only half as far as usual.

Jog easily for 30 to 60 minutes at 60 to 65% effort. Your Target Heart Rate zone will be from ____ to _____beats per minute.

Stretch and run your strides after this workout. Discipline yourself to do the little things that make a difference.

Chart of Competitive Training Pattern

Days Run per week	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Run 7 days	#1	#6	#1	#3	#1	#7	#8

You are encouraged to take one day a week off. Monday is traditional, but any #1 day is possible.

CHAPTER EIGHT

Using Pace and Effort TO EVALUATE YOUR WORKOUTS

Although our discussion in this manual has been limited to the correlation between effort and heart rate, there is another correlation that can be made as a test that you've selected the right Target Heart Rates. Pace and heart rates can be correlated by using effort as a common denominator. You can use the Pace & Effort Chart below to see if your workouts make sense. Are you running too slow on your easy days or perhaps way too fast? Either case might be true if your maximum heart rate is above or below the average.

Using the Pace & Effort Chart as a backup test for Maximum Heart Rates

To use the Pace & Effort Chart as a backup test, go to a running track and time yourself for a mile as you go at 60-65% effort. Once you've got your pace per mile, find that time under the column labeled "Maintenance and Recovery" at 60-65% effort. (It's the fourth column from the left.) Then look one column to the left to see what kind of 10K time this level of fitness predicts for you. Or further to the left for a 5K or a mile time in an all-out race. Does this time seem possible to you? Are you in that poor or that good shape?

If your pace is way too slow, then perhaps you should predict a higher maximum heart rate by 12 to 24 beats. Increase your predicted maximum heart rate by 12 beats per minute and retest. If your pace still seems too slow, add another 12 beats and try again. Or if you are really flying and huffing and puffing at a 60-65% effort, then perhaps your maximum heart rate is actually much lower than predicted by the usual age adjustment method. So try lowering your predicted maximum heart rate by 12 beats per minute to see if that slows you down enough to make sense. If not, try lowering it another 12 beats per minute.

If after making these adjustments and testing them, you

still feel like your pace is too slow or fast, then go get tested.

Using the Pace & Effort Chart to evaluate training for competition

The Pace & Effort Chart will give competitive runners some hints at the paces and Target Heart Rate goals of a complete 4 Phase Training Program. Since the effort zones mentioned above in Chapter Six were from Phase III, you can check the 400 meter paces listed in the "Economy Pace" column with your current race times for 5K and 10K.

If you need more help structuring your workouts, try the book I've written for competitive runners: *The Runner's Coach, A Workout Workbook*, by Roy Benson.

Roy Benson's Pace & Effort Chart

If Your Current Mile Time is	Or If Your Current 5km Time is	Or If Your Current 10km Time is	And Your Maintenance & Recovery Pace Will Result in a 60% to 65% Effort for Each mile	And Your Phase I Endurance Pace Will Result in a 70% to 75% Effort for Each mile	And Your Phase II Stamina Pace Will Result in a 80% to 85% Effort for Each mile	And Your Phase III Economy Pace Will Result in a 90% to 95% Effort for Each 400m	And Your Phase IV Speed Pace Will Result in a 95% to 100% Effort for Each 100m
03:45	13:00 (04:11/mi)	27:00 (04:21/mi)	05:51	05:30	04:42	01:01.9	00:13.0
03:54	13:29 (04:21/mi)	28:00 (04:30/mi)	06:03	05:42	04:52	01:04.1	00:13.4
04:02	13:58 (04:30/mi)	29:00 (04:41/mi)	06:15	05:53	05:02	01:06.2	00:13.8
04:11	14:27 (04:39/mi)	30:00 (04:50/mi)	06:27	06:05	05:11	01:08.3	00:14.2
04:20	14:56 (04:49/mi)	31:00 (05:00/mi)	06:40	06:16	05:21	01:10.5	00:14.6
04:28	15:25 (04:58/mi)	32:00 (05:10/mi)	06:52	06:28	05:31	01:12.6	00:15.1
04:37	15:54 (05:07/mi)	33:00 (05:19/mi)	07:04	06:39	05:41	01:14.8	00:15.6
04:46	16:23 (05:18/mi)	34:00 (05:29/mi)	07:16	06:51	05:51	01:16.9	00:16.0
04:54	16:52 (05-26/mi)	35:00 (05:39/mi)	07:28	07:02	06:00	01:19.1	00:16.5
05:03	17:21 (05:35/mi)	36:00 (05:49/mi)	07:40	07:14	06:10	01:21.2	00:16.9
05:12	17:49 (05:45/mi)	37:00 (05:58/mi)	07:52	07:25	06:20	01.23.3	00:17.4
05:21	18:18 (05:54/mi)	38:00 (06:08/mi)	08:04	07:36	06:30	01:25.5	00:17.8
05:29	18:47 (06:03/mi)	39:00 (06:17/mi)	08:16	07:48	06:39	01:27.6	00:18.3
05:38	19:16 (06:13/mi)	40:00 (06:27/mi)	08:28	07:59	06:49	01:29.7	00:18.7
05:47	19:45 (06:22/mi)	41:00 (06:37/mi)	08:40	08:10	06:59	01:31.8	00:19.1
05:56	20:14 (06:31/mi)	42:00 (06:46/mi)	08:52	08:21	07:09	01:33.9	00:19.6
06:04	20:43 (06:41/mi)	43:00 (06:56/mi)	09:03	08:32	07:18	01:36.1	00:20.0
06:13	21:11 (06:50/mi)	44:00 (07:06/mi)	09:15	08:43	07:28	01:38.2	00:20.5
06:22	21:41 (06:59/mi)	45:00 (07:16/mi)	09:27	08:54	07:37	01:40.3	00:20.9
06:31	22:10 (07:09/mi)	46:00 (07:25/mi)	09:38	09:05	07:47	01:42.5	00:21.4
06:39	22:38 (07:18/mi)	47:00 (07:35/mi)	09:50	09.16	07:56	01:44.6	00:21.8
06:48	23:07 (07:27/mi)	48:00 (07:44/mi)	10:01	09:27	08:06	01:46.7	00:22.2
06:57	23:36 (07:37/mi)	49:00 (07:54/mi)	10:13	09:38	08:15	01:48.8	00:22.6
07:06	24:05 (07:46/mi)	50:00 (08:04/mi)	10:24	09:49	08:25	01:50.9	00:23.1
07:15	24:34 (07:55/mi)	51:00 (08:14/mi)	10:35	10:00	08:34	01:52.9	00:23.5
07:23	25:03 (08:05/mi)	52:00 (08:23/mi)	10:46	10:10	08:44	01:55.0	00:24.0
07:32	25:32 (08:14/mi)	53:00 (08:33/mi)	10:58	10:21	08:53	01:57.1	00:24.4
07:41	26:01 (08:24/mi)	54:00 (08:43/mi)	11:09	10:32	09:02	01:59.1	00:24.8
07:50	26:30 (08:33/mi)	55:00 (08:52/mi)	11:20	10:42	09:12	02:02.4	00:25.5
07:59	26:59 (08:42/mi)	56:00 (09:02/mi)	11:31	10:53	09:21	02:03.3	00:25.7
08:07	27:28 (08:51/mi)	57:00 (09:11/mi)	11:42	11:03	09:30	02:05.3	00:26.1
08:16	27:56 (09:01/mi)	58:00 (09:21/mi)	11:52	11:13	09:39	02:07.4	00:26.5
08:25	28:25 (09:10/mi)	59:00 (09:31/mi)	12:03	11:24	09:48	02:09.4	00:27.0
08:34	28:54 (09:19/mi)	60:00 (09:41/mi)	12 : 14	11:34	09:57	02:11.4	00:27.4

Compiled by: Larry Simpson
References: Separately published research of J. Daniels & M.J. Karvonen: also "The Perfect Pace". Runner's World (Amby Burfoot).

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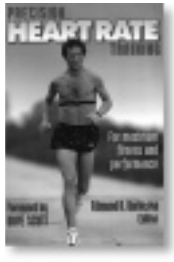

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If you´re like most runners, at some point, you´ll want to know if your workouts are actually helping you meet the objectives you set for yourself. Are you pushing yourself too hard and risking injury? Or not hard enough? Would some other training pattern work better for you? At this point, running “lessons” begin to sound like a smart idea. Maybe a running coach could give you some objective, helpful feedback that would help you get the most out of your workouts.

ROY BENSON

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