

Clyde Hart

Training Seminar

2007

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BAYLOR SPRINT RELAY EXCHANGE

**By Clyde Hart
Head Track Coach
Baylor University**

Over the years, there have been many types of sprint relay exchanges that have been used to varying degrees of success. As both a participant and a coach, I have used many different methods of exchanging the baton and have found each to have advantages and disadvantages. I can recall using the upswing method with the outgoing runner changing the baton from one hand to the other before making the next pass. Later we were introduced to a newer method which called for the baton to be kept in the same hand that the outgoing runner received it. We felt at that time we were getting a tremendous advantage over the opposition who were still using the old-fashioned method of changing the baton from hand to hand. Of course we accomplished this miracle of miracles by simply alternating left, right, left, right.

I feel now, looking back on this style of exchanging the baton, that the major thing was probably not the fact that we did not exchange hands with the baton but that we, as a team, were sold on the fact that we were gaining a decisive advantage over our opposition because we were saving time in not moving the baton from one hand to the other. I continued to use this method during my high school coaching career and my early years at Baylor. In about 1970, we decided to make a drastic change in our traditional manner of handling the baton and go to the overhand pass with the flat palm up by the receiving runner. I felt for many years that this was a very excellent way of receiving the baton and today still feel this to be an excellent way to make a good and fast exchange. However, while making a recruiting trip to West Texas and visiting with a fine high school coach, he showed me a method he was using for his high school sprint relay team. At first I was not very impressed with this method because I just could not see how it could work with any degree of accuracy and how you could possibly teach youngsters to do what he was asking them to do.

Upon returning home, I experimented with his method and was amazed at how fast our youngsters could pick up on this and we have been using a variation of this method ever since that time. In my opinion, it is an outstanding way to achieve a quick, fast exchange with a minimum of error. Basically, the sprint relay exchange we use is very similar to the regular overhand pass that most people use today. However, there is one major difference and that is in the actual exchange of the baton from incoming to outgoing runner. In our method the outgoing runner does not have the baton presented to him but instead he literally takes it out of the incoming runner's hand. Most people would say that it is totally impossible for an outgoing runner, without visual aid to take a baton out of an incoming runner's hand while going at full speed. I believe you will readily see when we go through our drills that it is not only possible but quite easy to accomplish this without a great deal of work. The average person watching the exchange being made, not knowing before hand the technique being used, would think he was watching the same method that was used in the past.

One of the major advantages is obvious and that is that the outgoing runner is able to concentrate totally on his responsibility of gaining as much speed as possible prior to receiving the baton. After all, this is the real key to fast relay running; making sure the

outgoing runner is going at the maximum speed he can possibly attain. In most relay exchanges, the outgoing runner will have to thrust his arm back and hold it in this position until the baton is given to him and he is able to resume a normal running position. Sometimes it only takes a matter of a fraction of a second for this to be accomplished. In other cases I have seen runners run with his arm in a back position for several yards before receiving the baton. There is no way an outgoing runner can reach top speed while running with one arm extended back and the other arm pumping vigorously trying to obtain as much speed as possible. This is not a natural running style and does not offer this runner a fair opportunity to get a good run out before receiving the baton.

In our method, the outgoing runner is able to use both arms in a vigorous manner much as a runner does in leaving the starting blocks. We all agree that the arms are a vital factor in gaining a good fast start. In our method, a runner can continue to use his arm even while the exchange is being made. Upon a sound command the outgoing runner will swing back his take hand and literally grab the baton from the incoming runner's hand and be back with a natural swing without ever missing a movement. We use the same sound command method as we did in our old exchange style. At first appearance, one would think this method of exchange to be very dangerous and that there would be a high probability of dropping the baton. Over the years of using this method, I have found the contrary to be true. There are several reasons for this.

First, it puts the full responsibility of the exchange on the incoming runner and allows the outgoing runner to concentrate entirely on getting a fast start and building as much momentum as possible before taking the baton. I find that at the end of a relay exchange, the incoming runner is decelerating and any action that he takes at this time will not hurt his speed nearly as much as the one who is trying to generate speed. The incoming runner aims the baton at the elbow of the outgoing runner and when he feels he is in a position to make a clean exchange, he will give a command. In our case the command is "Hey!" The outgoing man with a super-quick motion snatches the baton from the incoming runner's hand and is on his way. In a rare case, when the outgoing runner misses the baton on his first grab, he simply will resume his natural arm swing and will make a second grab at it on his natural back swing. In the old method of exchanging the baton, if the outgoing runner misses the baton on the first give, it usually results in the baton falling to the track. But in our case, the baton never leaves the incoming runner's hand until the outgoing runner has taken it from him. I feel that this insures us of a better chance of making a cleaner pass than it did in the old method of giving the outgoing runner the baton by simply laying it in his hand. As they say, "the proof is in the pudding," and we will demonstrate to you in the drills we show our kids. We are continually showing our youngsters this method because the ones we get from the high schools are rarely ever using this technique. You will face the same problem on continually showing our youngsters this method because the ones we get from the high schools are rarely ever using this technique. You will face the same problem on continually showing new youngsters this technique each year. I find it is very easily adapted.

Three of the drills we use for sprint relay exchange are similar to the drills that you will be using for any type of exchange you might use. However, we emphasize a couple of different points in order to change drills to accommodate the method we are using.

First, we will insist that the incoming runner will make sure that he has the proper distance from the outgoing runner before giving the command for him to swing back to take the stick. This is done by making sure that the incoming runner is about double arms length from the outgoing runner before presenting the baton, aiming it at the outgoing runner's elbow. This is very important. If he will aim the baton directly at the outgoing runner's elbow, the pass will be made. The key for the outgoing runner is to remember that when the sound command is made, he is to immediately swing back his hand and grab the baton. He should remember to keep his hand of the arm that is to be swung back in a position similar to that of a runner in a starting line position. That is, have the fingers and thumb spread wide apart, giving a wider target in which to take the baton. In many cases this will be anywhere from six to ten inches. If the baton is not in exact position, the runner will still be able to grasp it if it touches any part of the wide spread palm.

Drill One is simply a drill involving the two participating exchange men. The incoming runner stands behind and slightly to the side of the exchange side of the outgoing runner and gives him a sound command, at which time he aims the baton at his elbow. The outgoing runner swings back as quickly as possible with his hand in the proper position and takes the baton. This is repeated as many times as the coach thinks is necessary; we usually try to take about twenty-five of these before moving on to the next drill.

Drill Two is very similar to drill one except this time we line up the four participating exchange men in the order which they will be running and we exchange the baton right, left, right, left. The four exchange men will exchange in the same manner that they were exchanging as pairs except this time the drill will require them to exchange completely down the line until it gets to the last man.

Drill Three is usually the drill that will conclude our drill session. We call it the "Hot Stick Drill". This is the one they enjoy the most and I feel they get a lot of benefit from this as it is excellent for them to get their confidence that they can get the baton without even looking back. It is quite amazing to me that they can handle it in the manner in which they do. In fact, we even ask the incoming runner on this drill to move the baton slightly each time so they can see that they can exchange without the baton being exactly in the same place each time. The runner will not be expecting it to be in a certain spot but will keep his hand spread open wide so that the baton could be moved several inches either way and the exchange would not be affected in any way. It gets the name "Hot Stick Drill" simply because we are working the drill as in Drill One in pairs and the incoming runner is passing the baton to the outgoing runner except this time the incoming runner keeps his hand in exact position after the outgoing runner takes the stick from his hand. The outgoing runner will then swing the baton back and put it in the incoming runner's hand. On the next swing he will take it out and this is repeated, taking it and putting it back as many times as they can possibly do it until someone breaks the rhythm. I think it is an excellent drill.

Of course, we take full speed hand-offs each week working from half, three quarters and to where we are taking three to four fast exchanges at each position. We do this through the first three days of each week, exchanging the baton at full speed. Daily hand-off drills must be done so that the runners are confident they can do the exchange

without difficulty. Moving on to the track and at full speed, there is a tendency to revert back to throwing the hand back so the incoming runner can place the baton in the hand, but will rapidly learn to take the baton as confidently at full speed as in the standing position. I believe one of the primary secrets in a good relay team is their confidence in the advantage they have over their opponent which their method gives them. After experimenting with this method, you have a good selling point to spur your kids on to better and greater performances in relay running.

4 x 400 Relay Running

I. Selection of Personnel

- A. Close observation of all candidate's abilities is important**
- B. The best four open 400-meter runners are not always best for the relay, but it's a good starting point.**

II. Placement of relay team members

- A. Normally the fastest runner should run last. However, if the team is not competitive enough to have a chance to win, then run him/her earlier in the line-up.**

B. The lead-off runner needs to be consistent. A strong runner such as 400 Intermediate hurdler or 800 runner would work well leading off the 4x400 relay.

C. The second runner should be a sprinter-type runner because he/she needs to run the first 200 in lanes, and the ability to get to the break point is important.

D. The third runner is a competitive “go-after-them” type runner. Usually it’s the second-best 400 runner.

III. Include 200, IH, and 800 runners, as well as 400, in the pool of runners to be considered.

Many runners will run totally different races with a baton in their hand.

IV. Hand-offs

- A. More time can be given on a 4x400 relay hand-off than can be given on a 4x100 relay.**
- B. Right-to-left hand-off is preferred.**
- C. The incoming runner should present the baton high so it can be easily seen.**
- D. The outgoing runner should not take his eyes off the incoming runner.**

- E. The outgoing runner should let the incoming runner get close enough to let him/her sprint out hard and take the baton while running as fast as possible.**
- F. The outgoing runner will take the baton by reaching upward like picking an apple off a tree.**

V. Common mistakes

- A. Outgoing runner not going out hard enough at start.**
- B. Outgoing runner taking eyes off incoming runner.**
- C. Trying to make more than one pass. There is time for only one pass.**

- D. Getting boxed inside and not being able to get out and run.**

 - E. Not pacing oneself (running too fast at start and losing valuable time at the end by not being able to run through hand-off zone.)**
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400 METER TRAINING
Clyde Hart, Head Track and Field Coach
Baylor University
Waco, Texas

Introduction The 400 meter dash is an endurance sprint incorporating the speed of the sprinter and the endurance of the half miler. It is considered by many to be one of the most demanding and grueling of competitive events. Usually the 400 meter runner will fall into two distinct categories--sprinter types and half-miler types. Both of these types have had their share of success over the years. Occasionally you will find an athlete who possesses some characteristics of both the sprinter and half miler.

Michael Johnson, a former Baylor University and World Champion in both the 200 and 400 meters, is a prime example of the sprinter type 400 runner. However, he has developed his strength and endurance over the years to the level now that he can better maintain his superior speed over a longer distance than his competitors.

Technique The ability to distribute one's speed and energies in the most efficient manner over the total racing distance becomes the primary concern in reaching success in the 400 meter dash. No one is capable of running the 400 meters from start to finish all out. Good pace judgment in effort and distribution is a must. Remember, the 400 meters is not a full sprint. Speed at 100 and 200 meters can be a tremendous advantage to the 400 meter runners but only if they learn to distribute these energies properly. Generally the outstanding 400 meter runner will have approximately a one second differential between their best open 200 meters and the time it takes them to run the first 200 meters of the 400 meter dash. The less experienced 400 meter runner should have approximately a two-second differential. A good formula for predicting the potential 400 meter time for 200 meter runners, providing they are willing to train and to give all they can to become a top 400 meter runner, would be to double the time of their best open 200 meters then add 3.5 seconds to this. It is obvious that the sprinter type has the advantage through the early stages of the 400 meters; however, if they are not trained properly, this advantage can melt away in a hurry toward the end of the race. The half-miler type will definitely have an advantage from the 300 meters mark on into the finish. The main reason we are seeing more of the sprinter type succeed in the 400 meters today is largely due to the fact that we are able to develop stamina and endurance more effectively than we can increase the sprinting abilities of the middle-distance runner.

Training The 400 meters is an oxygen-deficient event. This means that the level of oxygen absorption is below that which is necessary to supply the ATP (adenosine triphosphate) requirement. The energy used during the 400 meter run is derived from the breakdown of high energy phosphate compounds and from the splitting of glycogen to lactic acid. This event will rely primarily on two anaerobic systems--the ATP-PC and lactic acid systems. Physiologists have not found a good way to measure anaerobic power, and this makes it very difficult to know if one is increasing the anaerobic reserves or not. We must rely on what we have learned from the physiologists concerning the components of fatigue during the running of the 400 meter dash. This gives us input concerning the types of stress that we must deal with during both the 400 meter training sessions and competition.

Proper training will help the athlete learn to deal with the stress that they will face toward the end of the 400 meter run. We know that severe exercising imposes great stress on the body, and it must learn to adapt to this stress or it will break down. We also know that when the body is gradually put under stress, it will do whatever is necessary for its own well being to adjust to this new environment. When an organism is conditioned to the stress of athletic competition, it will be able to perform in that environment when called upon.

Training Segments The training year of the 400 meter runner will be divided into four segments:

- a) Off Season (Summer and Fall--September through December)
- b) Early competitive Season (January-February)
- c) Mid Season (March-April)
- d) Late Season (May-June)

Based on the demands of the 400 meter event, the following training workouts are recommended in varying degrees of emphasis during the training year. The time frame that each workout is used in the course of the training year is of vital importance. To derive the most from any training program, the runner must pay close attention to the proper introduction of a specific workout.

Types of Workouts

1. Speed Endurance This is running where the runner incurs a high oxygen debt, and there is a definite lactic acid buildup. This workout is vital to good 400 meter running. Distances that are run can vary from 100 to 600 meters. Number of repetitions are figured by multiplying the race distance 2 1/2 times; in this case this would be about 1000 meters. The recovery period will usually be around 10 minutes - this is to give the runner almost full recovery so that there will be quality in the runs. This drill is designed to help the lactic acid energy systems.

Examples of Speed Endurance Workouts

- | | |
|--------------------|-------------------|
| a) 10 x 100 | 5-10 minutes rest |
| b) 6 x 150 | 5-10 minutes rest |
| c) 5 x 200 | 10 minutes rest |
| d) 4 x 300 | 10 minutes rest |
| e) 3 x 350 | 10 minutes rest |
| f) 2 x 450 minutes | 10 minutes rest |

2. Tempo Endurance This aerobic workout will pay great dividends for 400 meter runners. Not only will it help them to increase their oxygen uptake, which will help to shorten their recovery time, but it will aid them in being able to accomplish more and longer workouts. This workout, since the runs are done at a slower pace, will help the runners learn rhythm; and as the workout suggests, tempo. Another vital byproduct of this workout is that it will also help to train the body to increase production of phosphate, which is a primary energy source. The emphasis in the workout should be on quantity and not on quality as is true in the aforementioned speed endurance workouts. The rest factor is generally kept short--usually 2 to 3 minutes.

Examples of Tempo Endurance Workouts

- | | |
|---------------------------|------------------------------|
| a) 8 x 200 | 2 minutes rest |
| b) 6 x 300 | 2 minutes rest |
| c) 50-100-150-200-300-350 | Walk same distance for rest. |

3. Strength Endurance This workout involves activities that will last longer than 10 seconds in duration. Such activities will include resistance running, long-hill running and stadium step runs.

Examples of Strength Endurance Workouts

- 6 x 150 meter hill
- 6 x 60 stadium steps
- 6 x 15 second duration long rope runs

4. **Endurance Running** This workout is pure aerobic running. It will consist of continuous runs of 15 to 45 minutes at a steady-state speed. Although the 400 meters only requires about 5% aerobic running, it is important to the 400 meter runners to get a good base of aerobic running in order that they can improve their oxygen uptake so that their recovery time between efforts will be cut to a minimum.

Examples of Endurance Running

- a) 15 minutes at steady-state speed
- b) 30 minutes of fartlik running
- c) 6 x 800 meters on cross country course with 3 minutes recovery time

5. **Power Speed** This workout emphasizes speed of muscle contraction. This is usually done with less than 10 repetitions and no more than 10 seconds per repetition.

Examples of Power Speed

- a) short hill runs of about 60 meters
- b) 10 x 30 meter harness runs
- c) 10 x 10 second fast rope jumps

6. **Event Running** This workout does exactly what the name implies. The runner will run different distances at a pre-determined race strategy in order to learn to work on different aspects of running the 400 meters. We also refer to this as segment running.

Examples of Event Workouts

- a) 3 x 300 meters. First 50 meters all out. Next 150 meters, relaxed floating action. All out on last 100 meters. All timed and recorded.
- b) 2 x 450 meters. The first 200 meters, 300 meters, 400 meters and final 50 meters are all timed and recorded.
- c) 1 x 350 meters. Quality run, with each segment run as if in the 400 race coming up.

7. **Speed** These workouts will vary from distances of 30 meters to 150 meters. Work will be done at full speed either on the straight-away or curve. Rest is usually long between runs in order to give full recovery so that we might receive quality performances. Relay hand-off work will count as doing speed workouts.

Example of Speed Drills

- a) 6 x 40 meter starts
- b) 6 x 60 meter flying starts
- c) 6 x sprint relay hand-offs 60 meters

8. Strength Strength workouts consist of both general and specific strength development. Our general strength development is done through the traditional weightlifting programs of both free weights and machines. We also recommend the use of plyometric drills to give us our specific weight work.

Examples of Strength Training

- a) 30 minute traditional weightlifting workout (1 set 13 reps)
- b) Explosive jumps for the development of starting power and acceleration
- c) 3 sets of 10 hops each leg
- d) fast 50 meter bounding runs with bar bell.

The following chart indicates the percentage of emphasis to be placed on the above listed workouts.

Percentage of Emphasis Chart For Workouts

| <u>Types of Workouts</u> | <u>Fall</u> | <u>Early</u> | <u>Mid</u> | <u>Late</u> |
|--------------------------|-------------|--------------|------------|-------------|
| Speed Endurance | 75 | 90 | 100 | 100 |
| Tempo Endurance | 100 | 100 | 100 | 75 |
| Strength Endurance | 100 | 90 | 80 | 70 |
| Endurance Running | 100 | 20 | 10 | 5 |
| Power Speed | 20 | 60 | 70 | 80 |
| Event Runs | 25 | 90 | 100 | 100 |
| Power Speed | 20 | 60 | 70 | 80 |
| Strength | 100 | 100 | 100 | 100 |

Emphasis is given in terms of % of use recommended for each workout in relation to each segment of the training year

400 Meters
Sample Workouts

1. Fall (September through November)

- Monday**
1. Warm-up: 1 mile cross country run
 2. Flexibility exercises
 3. 2 x 600 Speed 60 sec. 400/ rest 15 minutes
 4. 3 x 300 Speed 50 sec./rest 1 minute
 5. 3 x 300 Speed 40 sec./rest 5 minutes
 6. 6. Cool down: 1 mile cross country run
 7. Weights

- Tuesday**
1. Warm-up: 1 mile cross country run
 2. Flexibility exercises
 3. 10 x 200 Speed 30 sec./rest 2 minutes
 4. 6 x 150 long hill runs Speed fast/rest, jog back
 5. Cool down: 1 mile cross country run

- Wednesday**
1. Warm-up: 1 mile cross country run
 2. Flexibility exercises
 3. 4 x 300 (Event Run) Speed 40 sec/rest 5 minutes
(50 fast—150 relaxes, 200 time 28 seconds—100
picked up fast—last 50 steady and keeping good form)
 4. 4 x 40/ rest 20 secs
 5. Cool down 1 mile cross country run
 6. Weights

- Thursday**
1. Warm-up: 1 mile cross country run
 2. Flexibility exercises
 3. 600-400-200-400-600 Speed 30 sec pace/rest 5 minutes
 4. 6 x 100 strides Speed medium/rest 1 minute
 5. Cool down 1 mile cross country run

- Friday**
1. Warm-up: ½ mile cross country run
 2. Flexibility Exercises
 3. 2-mile cross country timed run
 4. Weights

Saturday No organized practice; encouraged to do 3 miles running

Sunday No organized practice; encouraged to do 20-minute fartlik

2. Indoor Season (December-February)

- Monday**
1. Warm-up: 1 mile in and outs (100 sprint/100 walk, 3 laps, faster each lap; 4th lap run 200, 26 seconds)
 2. Flexibility Exercises
 3. 2 x 500 Speed 56 seconds 400/rest 15 minutes
 4. 2 x 200 Speed 30 seconds/ rest 30 seconds
 5. 4 x 40 Speed Quick/ rest 20 seconds
- Tuesday**
1. Warm-up: 1 mile in and outs
 2. Flexibility Exercises
 3. 8 x 200 Speed 28 seconds/ rest 3 minutes
 4. 6 x 150 long hills Speed Quick/ rest jog back
 5. Weights
- Wednesday**
1. Warm-up: 1 mile in and outs
 2. Flexibility Exercises
 3. 4 x 300 (Event Run) Speed 40/ rest 5 minutes
 4. 2 x 200 Speed 30/ rest 30 seconds
 5. 4 x 40 Speed Quick/rest 30 seconds
- Thursday**
1. Warm-up: 1 mile in and outs
 2. Flexibility Exercises
 3. 1 x 350 Speed Quick/rest 15 minutes
 4. 4 x 200 Speed 26 seconds/rest 5 minutes
 5. Weights
- Friday**
1. Warm-up: 1 mile in and outs
 2. Flexibility Exercises
 3. 3 x 200 Speed 30-29-28/rest 3 minutes
 4. 1600 relay hand-off work
- Saturday** Meet
- Sunday** No organized workout, encouraged to do some light cross country Running, about 20 minutes

3. Early Season (March-May)

| | | |
|-------------------------|---|---|
| <u>Monday</u> | 1. Warm-up: | 1 mile in and outs |
| | 2. Flexibility Exercises | |
| | 3. 2 x 450 | <u>Speed</u> 52 seconds 400/<u>rest</u> 15 minutes |
| | 4. 4 x 40 | <u>Speed</u> Quick/<u>rest</u> 30 seconds |
| | 5. 2 x 200 | <u>Speed</u> 30 seconds/<u>rest</u> 30 seconds |
| <u>Tuesday</u> | 1. Warm-up | 1 mile in and outs |
| | 2. Flexibility Exercises | |
| | 3. 6 x 200 | <u>Speed</u> 26 seconds/<u>rest</u> 3 minutes |
| | 4. 4 x 40 | <u>Speed</u> 30 seconds/<u>rest</u> 30 seconds |
| | 5. Weights | |
| <u>Wednesday</u> | 1. Warm-up | 1 mile in and outs |
| | 2. Flexibility Exercises | |
| | 3. 4 x 350 | <u>Speed</u> (28) 49 seconds/<u>rest</u> 5 minutes |
| | 4. 8 x 100 short hill runs | <u>Speed</u> fast/<u>rest</u> walk back |
| | 5. 2 x 200 | <u>Speed</u> 30 seconds/<u>rest</u> 30 seconds |
| <u>Thursday</u> | 1. Warm-up | 1 mile in and outs |
| | 2. Flexibility Exercises | |
| | 3. 3 x 200 | <u>Speed</u> 30 seconds/<u>rest</u> 30 seconds |
| | 4. s x 150 (build-ups) | <u>Speed</u> slow-medium-fast/<u>rest</u> walk back |
| | 5. Weights | |
| <u>Friday</u> | 1. Warm-up | 1 mile in and outs |
| | 2. Flexibility Exercises | |
| | 3. 3 x 200 | <u>Speed</u> 26 seconds/<u>rest</u> walk 200 (mid curve) |
| | 4. 1600 relay hand-offs | |
| <u>Saturday</u> | Meet | |
| <u>Sunday</u> | No organized practice, encouraged to do some cross country Running, about 20 minutes | |

4. Late-Season (May-June)

| | | |
|------------------|--|--|
| <u>Monday</u> | 1. Warm-up 2. Flexibility Exercises 3. 4 x 40 4. 1 x 450 5. 2 x 200 | 1 mile in and outs <u>Speed Quick/rest 30 seconds</u> <u>Speed 50 seconds 400/rest 15 minutes</u> <u>Speed 30 seconds/rest 30 seconds</u> |
| <u>Tuesday</u> | 1. Warm-up 2. Flexibility Exercises 3. 3 x 350 4. 2 x 200 5. Weights | 1 mile in and outs <u>Speed (24) 44 seconds/rest 5 minutes</u> <u>Speed 30 seconds/rest 30 seconds</u> |
| <u>Wednesday</u> | 1. Warm-up 2. Flexibility Exercises 3. 1 x 320 (Quality run) 4. 3 x 200 5. 5 x 100 meters short hill | 1 mile in and outs <u>Speed fast/rest 15 minutes</u> <u>Speed 30 seconds/rest 30 seconds</u> <u>Speed fast/rest walk back</u> |
| <u>Thursday</u> | 1. Warm-up 2. Flexibility Exercises 3. 3 sets speed makers (60 meter all out sprints – 40 meter swing down—40 meter slow jog—repeat until 4 all-out sprints are done) 3 minutes rest between sets 4. Weights | 1 mile in and outs <u>Speed fast/rest jog</u> |
| <u>Friday</u> | 1. Warm-up 2. Flexibility Exercises 3. 3 x 200 4. 1600 relay hand-offs | 1 mile in and outs <u>Speed 26 seconds/rest walk 200</u> (Mid curve) |
| <u>Saturday</u> | Meet | |
| <u>Sunday</u> | No organized practice, encouraged to do a little cross country Running, about 20 minutes | |

These workouts can be applied to all levels of 400 meter runners, but performance times given in this sample are for a potential 46-second quarter miler so adjustments should be made accordingly.

**400 Meter
Running Exercises**

| <u>Exercise</u> | <u>Brief Description</u> | <u>Benefits</u> | <u>Season</u> |
|---------------------|--|---|-----------------------|
| Endless Relay | Baton is kept moving, Rest and run are controlled | Endurance, stamina and exchange work | All |
| Australian Pursuits | Sprints and slow jogging for total of 3 minutes | Endurance, speed and kicking drill | All |
| Long hill | 100 meters or more, Slow runs | Endurance, stamina and knee lift | Fall/Early |
| 600 meters | Pace 400, pick-up last 200 | Endurance, Stamina | Fall/Early |
| 500 meters | Pace 400, pick-up last 100 meters | Endurance, stamina and knee lift | Early/Mid |
| 350 meters | Quality and training distance add 5-7 seconds to 400 time | Mental Preparation endurance and stamina | Early/Mid and late |
| 300 meter event | 200 meters slow pace, last 100 meters faster | Mental Preparation endurance, running efficiency | Early/Mid and late |
| 450 meters | Pace 400 and pick-up relaxed last 50 meters | Mental Preparation. endurance, stamina and knee lift | Mid/late |
| Short Hill | Less than 100 meters fast runs | Speed, leg drive and stamina | Mid/late |
| Flying 100s | Repeat 100s with Jogging | Speed, strength & running efficiency | Mid/late |
| 320 meters | Quality distance, add 10-12 seconds for 400 time | Mental Preparation speed and running efficiency | Mid/late |
| Speedmaker | Short 60 meter sprints Jogging | Speed, strength & running efficiency | Mid/late |
| 150 meter Build ups | 50 meter $\frac{1}{2}$ speed, 50 meter $\frac{3}{4}$ speed, 50 meter near full speed | Running efficiency, speed, endurance and mental preparation | Early/Mid and late |

400 Meter Training

I. 400 meter dash is an endurance sprint

A. Sprinter speed and 800 runner endurance

B. Determine type of 400 runner to be trained.

1. Speed type 200/400

2. Endurance type 400/800

C. Diminish weaknesses and increase strengths

II. Technique of running 400 meters

A. Distribute runner's speed and energies in most efficient manner over the total racing distance.

- B. Good pace judgment is vital to good 400 success**
- C. Predict potential 400-meter times from a runner's 200-meter time.**
- D. Develop endurance versus speed development. Stamina is developed faster in sprinter than speed in 800 runner.**

III. Anaerobic versus aerobic training

- A. Past approach: 90% anaerobic and 10% aerobic**
- B. New approach: aerobic training can be as much as 40%**

IV. Deal with stress that comes at end of 400 meters.

A. Body should gradually be put under stress in training runs.

B. Repeated stress runs over several months will gradually condition the body to handle stress.

C. Moderate runs of 40 seconds will build up lactic acid.

V. Training segments (4 equal parts)

A. Off-season

B. Pre-season

C. Early season

D. Late season

VI. Key to Training: going from quantity to quality

- A. Pyramid approach**
- B. Base of aerobic running**
- C. Movement up the pyramid should be slow.**

VII. Types of 400 Work-Outs

- A. Speed endurance:**
 - 1. runner incurs a high oxygen debt.**
 - 2. runs distances of 100-600 meters. Total distance is 2 ½ times racing distance.**
 - 3. Rest 5-10 minutes.**

B. Tempo endurance: Aerobic workout that helps increase oxygen uptake, which helps shorter recovery time.

1. Doing the run slower helps runner learn tempo and rhythm.

2. Emphasis is on quantity, not quality.

3. Rest will be short.

C. Strength endurance: activities that last longer than 10 seconds in duration with some type of resistance running—long hills, or stadium steps.

D. Endurance running: Pure aerobic running. Runs of 15-45 minutes.

- E. Power Speed: speed of muscle contraction is emphasized. Fewer than 10 seconds in duration.**
- F. Event running: runs that teach runner how the 400 should be run.**
- G. Speed: full speed runs of 30 to 150 meters. Rest is usually long.**
- H. Strength: general and specific strength development. Traditional weightlifting. Plyometric used as needed.**

VIII. Slow down and run faster

- A. Allows runner to do more running which will develop more endurance.**

- B. Allows runner to take less rest between runs which in turn helps develop more endurance.**
- C. Protects runner from injury.**
- D. Stronger will mean faster.**

IX. No such thing as peaking

- A. Continually reloading will keep 400 runner strong, fresh and able to continue to get better.**
- B. Training is like putting money into bank account, and racing is like writing a check on that account.**
- C. runners can't lose speed if they stay strong. Speed and strength are synonymous.**

D. Testing the runner should be done in competition, not practice.

E. Goal should be to run fast at start of season and faster at the end.

F. Treat the season as if it were several mini seasons.

G. Better to be under-trained than over-trained.

X. Race Strategy

A. Ideal race pattern is

--smooth deceleration

--with as little tightening up at finish as possible

B. Runner should think of the race as 4 different races

--First 100 meters pushed hard.

--Second 100 meters paced to within 1 second of best 200 time.

--Third 100 is positioning so as to be even or even ahead out of the turn.

--Fourth 100 is focused on keeping good technique and trying not to decelerate or tighten up at the finish.

XI. Summary

A. Quantity to Quality

- B. Workouts should follow progressive pattern.**
- C. Rest should be as short as possible.**
- D. Stress and lactic acid build-up comes only after a moderate run of around 40 seconds.**
- E. Event runs are very important!**
- F. Each day's workouts should help develop a specific area of 400 running.**
- G. The right 200 pace is vital to success in 400-meter running.**

200 Meter Training

**Coach Clyde Hart
Baylor University
Waco, Texas**

As is the case in all Track and Field running events, the runner will have certain strengths, and the training of that individual would depend on where these strengths lie. The 200 meter runner will usually fall into one of two categories, A-100/200 type or B-200/400 type. In some rare cases you will have individuals that will possess ability to fall into both.

It is important to establish early on which type your 200 runner is. I feel very strongly that training should always be directed at a runner's strengths more than to their weaknesses. There is a time and place in the training program to improve upon a runner's weaknesses. In the case of the 200 meter runner, this should be done periodically throughout their training year. It will be different for each of the two types. For example, if the 200 runner is a 100 meter type, then that runner's Off Season training program should incorporate drills and workouts that will enhance his endurance and strength. In the case of a 400 meter type runner, we need to be conscious of the fact that this runner needs to work on their quickness and stride rate, and this needs to be done throughout the course of the year with more emphasis being done in late season.

A famous coach once made the statement that too many coaches work too long and hard to improve upon the weaknesses of their runners, and neglect to work on their strengths. Once you have determined what type of 200 runner you are working with, then you need to proceed with a program designed to ultimately enhance his strengths. There are some basic principles that I like to use as guidelines working my 200 runners.

- I Go from quantity to quality.**
- II Strength is synonymous with speed.**
- III Relaxation is the key element in good 200 meter running.**
- IV Minimize all-out speed running in practice.**

As to the race strategy and overall technique in racing the 200 meter as opposed to the 100 meters, I feel there is a distinct difference. Too many outstanding 100 meter runners are tempted to run the 200 meter in the same fashion that they are accustomed to doing in the 100 meters. I feel this is a mistake

The 200 meter runner has to realize that at about 50 to 60 meters they have to stop pressing and get into a relaxed sprint rhythm. This will help to maintain their velocity throughout the course of the race. It is a common mistake on the part of the 200 meter runner to try to press all the way through the first 100 meters, and then attempt to hang on at the end. The 200 runner can maintain within a few hundredths of a second, his best hundred meter time by relaxing and mentally concentrating on getting into a relaxed running style. By doing this he will have a better chance to maintain his top speed down the final straightway where ultimately the 200 meter will be won.

I believe in trying to minimize the amount of all-out sprinting in practice. As an example, take the case of Michael Johnson who trains as a B-Type (200-400), he was limited in his speed work to practice starts, relay handoffs and racing, and speed drills. If speed drills are implemented in workouts at the proper time, then nothing is lost, and a lot can be gained by minimizing all out sprinting.

I would advise working on starts around the curve. One particular drill that we use is to place a marker in the lane at 30 meters and have your sprinter take 4 to 6 starts at this distance, and then move the marker out to 40 meters, take one start there, and continue moving the marker out until the runner has taken starts at least through the first 60 meters.

I am enclosing some sample workouts for each of the four training periods of our year at Baylor University. I hope they will be of assistance to each of you in working with your 200 meter runner.

200 Meter Training

Sample Workouts

I. Pre-Season (Sept.-Oct.-Nov.) (grass area preferred)

- Monday
1. Warm-up (30 min.)
 2. 6 x 100 Technique runs
 3. $\frac{16 \times 200}{2}$ 36 (39)
 4. Wgts.

- Tuesday
1. Warm-up (30 min.)
 2. 6 x 50 Technique runs
 3. A - $\frac{4 \times 350}{10}$ (35) 52.5
B - $\frac{4 \times 600}{10}$ (75) 1:52
 4. 800 cool-down slow (grass)

- Wednesday
1. Warm-up (30 min.)
 2. 10 x 50 Technique runs
 3. $\frac{3 \times 5}{2}$ Long Hills (300)
 4. 1 x 800 Jog
 5. Wgts.

- Thursday
1. Warm-up
 2. 15 min. Cross-Country Run

- Friday
1. Wgts.

II. Indoor Season (Dec.-Jan.-Feb.)

- Monday
1. Warm-up
 2. $\frac{3 \times 150}{3}$ Build-ups
 3. A - $\frac{8 \times 200}{2}$ 28
B - $\frac{10 \times 200}{2}$ 28
 4. $\frac{4 \times 40}{30}$ Quick Action
 5. Wgts.

- Tuesday**
1. Warm-up
 2. 3 x 150 Build-ups
 3. 8-10 Starts (curve)
 4. A – $\frac{2 \times 300}{5}$ (26) 39
B – $\frac{2 \times 450}{10}$ (54) 62
 5. $\frac{1 \times 200}{\text{wk}/200}$ 30
 6. $\frac{1 \times 5}{2}$ Short hills (100)

- Wednesday**
1. Warm-up
 2. $\frac{3 \times 150}{3}$ Build-ups
 3. Starts 6-8 curve
 4. A – $\frac{2 \times 250}{5}$ (26) 32
B – $\frac{2 \times 350}{5}$ (26) 46
 5. h-drill $\frac{3 \times 10}{3}$
 6. $\frac{1 \times 200}{5}$ 29
 7. Wgts.

- Thursday**
1. Warm-up
 2. 3 x 150 Build-ups
 3. A – $\frac{6 \times 100}{2}$
 4. B – $\frac{8 \times 100}{2}$
 5. $\frac{1 \times 800}{5}$ 29

- Friday**
1. Warm-up
 2. 3 laps (60/40) walk curves
 3. $\frac{1 \times 200}{\text{wk}/\text{lap}}$ (28) (42)

III. Early Season (Mar.-Apr.-May)

Monday

1. Warm-up
2. 3 x 150 Build-ups
3. A – $\frac{6 \times 200}{2}$ 26
B – $\frac{10 \times 200}{2}$ 26
4. $\frac{4 \times 40}{30}$ Quick Action
30 sec.
5. $\frac{2 \times 200}{30}$ 30
6. Wgts.

Tuesday

1. Warm-up
2. Starts 6-8 curve
3. A – $\frac{2 \times 250}{5}$ (25) 31
B – $\frac{2 \times 450}{10}$ (53) 61
4. $\frac{4 \times 40}{30}$ Quick Action
30
5. $\frac{2 \times 200}{30}$ 30

Wednesday

1. Warm-up
2. A – $\frac{3 \times 150}{5}$ (18)
B – $\frac{3 \times 350}{5}$ (26) 46
3. $\frac{4 \times 40}{30}$
4. $\frac{2 \times 200}{30}$ 30
5. Wgts.

Thursday

1. Warm-up
2. A – 2 sets speedmakers (60/40)
B – 3 sets speedmakers (60/40)
3. $\frac{2 \times 200}{30}$ 30

Friday

1. Warm-up
2. 3 laps (60/40)
3. $\frac{1 \times 200}{wk/200}$ 28

IV. Late Season (June-July-Aug.)

Monday

1. Warm-up
2. A – $\frac{5 \times 200}{1:45}$ 25
B – $\frac{7 \times 200}{1:45}$ 25
3. $\frac{4 \times 40}{30}$ Quick Action
4. $\frac{1 \times 200}{\text{wk}/200}$ 28
5. Wgts.

Tuesday

1. Warm-up
2. Starts 6-8 curve
3. A – $\frac{2 \times 250}{5}$ (23) 28
B – $\frac{2 \times 450}{10}$ (50) 57
4. $\frac{4 \times 40}{30}$ Quick Action
5. $\frac{2 \times 200}{30}$ 30

Wednesday

1. Warm-up
2. A – $\frac{3 \times 150}{5}$ (16)
B – $\frac{3 \times 350}{5}$ (24) 44
3. $\frac{4 \times 40}{30}$ Quick Action
4. $\frac{2 \times 200}{30}$ 30
5. Wgts.

Thursday

1. Warm-up
2. A – 2 sets speedmakers (60/40) (progressive)
B – 3 sets speedmakers (60/40) (progressive)
3. $\frac{2 \times 200}{30}$ 30

Friday

1. Warm-up
2. 3 laps (60/40)
3. $\frac{1 \times 200}{\text{wk}/200}$ 26

200 meter training

I. Determine what type of 200 runner will be trained.

A. Speed type 100/200

B. Endurance type 200/400

II. Determine training methods according to the runner's strengths.

A. Work to improve weakness during off-season.

B. Work to develop strengths during the entire year.

III. Set up a program to best develop both areas: strengths and weaknesses

A. Divide year into four equal segments:

Off-season

Pre-season

Early season

Late season

B. Select training site, grass, hills, etc.

C. Begin related conditioning activities, weight training, plyometrics, swimming, hill running, etc.

**IV. Go from quantity to quality in
Developing a training program**

A. Build a base with aerobic training

B. Use a pyramid approach to setting up training program

**V. Strength & speed are synonymous.
Ways to get stronger are:**

A. weight training (standard weight training programs)

B. related strength training (plyometric, hill running, sand running, resistance rope runs, etc.

C. Endurance runs, pure aerobic running.

D. Tempo endurance runs, aerobic running in slow, high, volume number of runs.

E. Strength endurance (runs that last longer than 10 seconds.)

F. Power speed (emphasis is on speed of muscle contraction, is usually done with fewer than 10 repetitions and no more than 10 seconds per repetition.)

G. Event running (runs with race strategy in mind, working on different aspects of the race.)

H. Speed runs (will vary from distances of 30 to 150 meters)

V. Relaxation: the key to good sprinting

A. Body mechanics must be perfected.

B. Mental image must be developed of what is required in relaxation. of body parts.

- C. Drills are implemented to stress the importance of relaxation.**
- D. 150 meter build-ups, working on increasing speed while not tightening up.**
- E. Speed-maker drill, sprints and jogging.**

VI. Minimizing Speed in Practice

- A. Slower running allows for more running and more running will increase strength.**
- B. Slower running allows for less rest between runs. Less rest will increase strength.**

- C. Slower running will aid sprinter in learning better technique and thus help sprinter's ability to relax.**
- D. Slower running will help protect sprinter from injury.**

VII. Developing the Start

- A. Make sure the strong leg is in the front block of the starting blocks.**
- B. Proper distance must be determined between each block.**
- C. A comfortable starting position must be determined.**
- D. 200 starts should be done on the turn of the curve.**

XI. Race strategy and technique

- A. Start should be as fast as possible while negotiating the curve.**
- B. Drive hard for the first 50 meters**
- C. From 50 meters to 150 meters sprinter must focus on maintaining maximum velocity while trying to stay relaxed.**
- D. From 150 meters on to the finish, sprinter must try to accelerate speed while keeping technique intact.**

Speed Development

- I. Speed can be improved with proper training.**
 - A. Genetic makeup determines an athlete's maximum potential, but improvement is possible.... to what degree is largely up to the athlete and those persons who direct the training.**
 - B. The degree of improvement that the athlete will make is determined by his abilities, his choice of training, and his coach.**
- II. The coach must first identify sprint candidates**
 - A. Fast-twitch and slow-twitch fiber**

B. Flexibility

C. Reaction Time

D. Body fat (restricts speed of movement)

E. Physical make-up (size)

F. The speed of muscle contraction (can be improved with proper training)

III. Explosive Power

A. Speed in short distance running can be improved through strength/power training

B. The speed of muscle contraction can be improved with proper training.

IV. Running Stride Length

- A. A key element in the speed equation**
- B. If done improperly, it can be a disadvantage to the sprinter.**

V. Stride rate (steps per second)

- A. Can be improved without hurting stride length.**
- B. Just like stride length, if the stride rate is not executed properly, it will be a major disadvantage to the sprinter.**

VI. Relaxation and Technique

- A. This is the third element of the speed equation along with stride length and stride rate.**

- B. Like the other two elements, if The athlete doesn't practice relaxation and proper technique, he will be at a disadvantage.**

VII. Training the Sprinter

- A. Year-round program of training**
- B. Use the pyramid approach to setting up the year's training program.**
- C. Always go from quantity to quality.**
- D. If the athlete takes the time to reload, he will never peak too early.**

VIII. Work to improve the key elements in good sprinting

A. Overall conditioning and fitness

B. Specific conditioning

C. Stride Length

D. Stride rate

E. Foot placement

F. Air-time

G. Recovery leg.

IX. Improving Stride Length

A. Better sprinting form

B. Legs and ankles must get stronger

C. Work to improve both hip and ankle flexibility

X. Improving Stride Rate

A. Proper warm-up can enable sprinter to have faster stride rate.

B. Body fat can hinder stride rate if body-fat ratio is too high.

C. Strength/power training (weight training and plyometrics) are a great benefit to development of stride rate.

D. Sprint-assisted training has some benefit, but the verdict is still out on how much it benefits.

E. Down-hill running

F. Fast-action drills, such as the h-drill is helpful in developing stride rate.

G. Pawing drill is great in developing the recovery leg.

H. Ladder-on-the-ground drill requires fast action of the recovery leg.

XI. Speed-Maker drill

A. Designed to incorporate all the elements in fast sprinting into one drill.

B. This drill allows the coach to be in position to observe the runners as they run repeated short sprints of 60-70-80-90 meters.

- C. During this drill, the athlete is focused on proper sprint technique and can be corrected by the coach as he passes by during his recovery phase.**

XII. Train slow/Race fast

- A. Run full out in only a few of the training sessions.**
- B. Starts, relay hand-offs, and drills that cover 60 to 90 meters are the only drills where full effort is required.**
- C. Cuts down on injury possibilities**
- D. Slower runs allows the athlete to run more in training, while resting less.**

E. Strength and speed are synonymous.

F. Strength is gained not only in the weight room but on the track. Design a training program to develop strength and endurance in sprinters.

Coaching Athletes to be their Best

- I. There is only one thing worse for an athlete than not having a coach – and that is having a bad coach.**
 - A. Coaches have an awesome responsibility. Athletes put their trust and often their future in the coach's hands. The coach is also parent, agent, counselor, judge and jury.**
 - B. Any coach who is through learning is through!**
 - C. Everyday the coach should do something to improve his coaching expertise. Clinics, books, film, video, word-of-mouth—whatever it takes to improve, the coach should strive to do it.**

D. One major learning tool is the athletes themselves.

II. Keep up with the latest in training methods.

A. New information often comes out regarding most event areas.

B. Utilize information from those who have a proven track record of success over a long period of time.

C. Most outstanding coaches do not change what they have been successful with but they do make minor adjustments.

D. My personal theory is that coaches should try to improve their training procedures by at least one percent a year.

III. Advantages of having one training program over a long period of time

A. The coach can evaluate workout performances over a long period of time and can make good sound decisions after review of them.

B. The athletes also will be more comfortable in a system where they can see improvement over a long period of time.

IV. “If it is not broke, don’t fix it!”

A. Many of the things that Michael Johnson did in workouts in 1996 were things others had done 10 years earlier. He could just do them better.

One drill we added in 1997 was a modified version of one of my miler’s workouts—we call this drill 30/30.

B. Our 200/400 workout program today is probably about 75% of what we were doing in 1975. The 25% additions have made us much better than in 1975; however, the 75% is still the backbone of our training program.

V. The coach must help the athlete to understand the principle of the training program if he is going to be successful.

A. Have a meeting at start of the training to give the athlete an overview of what is to be accomplished.

B. Goal-setting is an important motivator.

C. Goals must be realistic.

D. Most important is HOW the athlete expects to reach his goals.

VI. Relationship of Coach to Athlete

A. Both coach and athlete should maintain a professional relationship at practice as well at competitions.

B. The coach should provide the athlete a detailed time schedule regarding such things as warm-up, massage, final preparation before reporting to starting line.

C. The coach should know the athlete's mood swings in order to better communicate with the athlete in stressful situations.

D. A familiar routine seems to relax the athlete more.

VII. Are we as coaches any smarter than 25 years ago?

- A. We only have a bigger vocabulary.**
- B. For most of us, the track is our test lab. We have kept the methods that work and we have stopped using the ones that don't.**

VIII. Organizing Practice Sessions

- A. Very important to be organized in practice sessions because the athlete will respect the system more.**
- B. Communication with your athlete is vital.**

C. Post your training session so the athlete can prepare for the training in his mind while doing warm-ups. Record results daily.

D. Training area should be as pleasant as possible. It makes for a better mental frame of mind.

IX. Support staff is vital

A. Assistant coaches, if possible, for event areas.

B. Team doctors, general medical and specialists, such as bone and joint doctors, etc.

C. Chiropractor, acupuncturist, surgeon, etc.

D. Sports medicine, massage therapy, physical therapy.

E. Flexibility expert

F. Weight training coach

G. Media relations person

H. Manager (agent)