

**SPRINT STARTS**  
**Coach Johnson, Robert H.**  
**Wabash College**  
**Member of the "2000" Olympic Staff**

## ***BLOCK SETTING***

### **A. The Crouch Start**

There are many ways to set up blocks for the crouch sprint starts. This outline will describe briefly only a few of the methods that can be used for determining a sprinter's initial block setting. Keep in mind the goal of proper block placements is not only for a fast (0-15 meters) get away but to also enable a powerful efficient acceleration (15-30 meters) phase. The following give brief descriptions of some of the methods used with beginners, or sprinters looking to try a different technique.

#### **1. Walk and Kneel**

Have the athlete take a few quick (3-5) steps forward, then stop and kneel in a "to your marks" position. The athlete raises to a "set" position, moving slowly up and down back and forth, feeling for a position of balance and power. Repeat the walk and kneel procedure several times. When the sprinter decides on a suitable "on your marks" and "set" position, the coach then measures the distance from hands to the front foot; to the back foot; and/or between feet. Transfer this measurement to setting up blocks to the start line and test it's effectiveness.

#### **2. Shin and Bend**

The athlete kneels with the drive (front) leg just behind the start line. The length of the shin (knee to foot) is used as the spot to place the front block. The rear knee is placed just in front or along side the front foot. The rear foot is now in the proper spot. The athlete bends forward and assumes the "to your marks" position. As in the aforementioned start and with all techniques, the athletes move through the "feel for power" position procedure.

#### **3. Right Angle Thrust.**

The athletes assume an all fours position on the ground forming right angles at the hip/ab area and armpit/chest area. Simulating a football lineman preparing to drive or dive into a blocking sled. Curl the toes under. Press hips up with legs and feet to the "position of power". The back will be relatively flat with hips slightly higher than the shoulders. From this position, slide the preferred drive leg forward and underneath the torso. Again go through the feel for power position procedure.

#### **4. Steps**

The athlete stands at start line with back to finish line. The runner with the heel of one foot just inside the start line places the other foot, heel to toe and uses the two step measurement for placing the front block. This procedure is repeated taking three (3) heel/toe steps back for the placement of the rear block. Some athletes prefer to use the one and a half and the two and a half steps methods for setting up blocks.

#### **5. Leg Length Setting**

Measure the leg length of the athlete and use 55% of leg length for the setting of the front block and 42% of leg length the distance between blocks. Check for a 90° flex in front leg; go through the usual feel for the power position procedure.

## **B. Drills to Help Start Technique**

### **1. Gunfighter**

Have athlete, prior to start practice, stand and face the coach or starter as if he/she were going to draw on each other in a wild west gunfight. With arms hanging relaxed, the athlete takes an erect standing start position. On the command set, the sprinter anticipates and then reacts mimicking the quick draw hand action of the coach or starter. The runner reacts with the same quick arm movements he/she would use coming out of the blocks. The drill progresses to where the coach stands behind the athlete and after the "set" command gives a "clap" or sound to initiate to quick draw actions. The drill is also done with athlete in a kneeling (semi-set) "on your marks" position. This drill is designed to prep the sprinter to respond quickly and appropriately to the gun.

### **2. First Step Drill**









A rough rule of thumb to check for a good first step out of the blocks is to have the sprinter take five (5) heel/toe steps from the rear block. Place a piece of tape at the toe and heel of the fifth step to provide a target area or coach mark for where the first step out of the block should land.

### **3. 10 Step Drill**

Have the sprinter take several (20-30 meters) starts out of the block. As the sprinter accelerates from the block, count the first five (5) steps with front foot/last foot to leave the blocks and mark it. The goal of the drill is to improve drive via increase distance covered in the first 10 strides. Once a consistent 10-step area has been established, the sprinter can strive to improve timed efforts to the mark. It is important to have sprinter run the entire 25 to 30 meters and not just to the mark.

### **4. Acceleration Pattern Drill**

This is another rough rule of thumb drill as it applies to the approximate acceleration stride pattern (for the mature male sprinters). Example: the first stride is measured from the base of the front block to the toe mark of the first step. If this step is 3'6 (1.06m) the next stride and the subsequent strides increase an additional 6 inches or so. The increases may be less (shorter) with women and boys. Place the tape or chalk marks as check or guide for the first 7-9 strides.

	PHASE	BODY PARTS	CRITERIA
	On Your Marks	1. Head/Neck 2. Arms 3. Thumbs, fingers 4. Rear knee 5. Rear foot 6. Toe	relaxed, eyes focused towards ground extended, vertical parallel to starting line touching ground in firm contact with block touching ground
	The "Set" Position	7. Head/Neck 8. Shoulders 9. Arms 10. Hips 11. Ball of foot	eyes focused slightly ahead slightly moved forward extended raised above shoulder level putting pressure onto block
	Reaction To Gun	12. Head 13. Trunk 14. Hands 15. Feet (heels)	unchanged raised to horizontal position lift off the ground being pushed back slightly
	Starting Arm/Knee Drive	16. Trunk 17. Arms 18. Free leg	unchanged swinging in opposite directions intense forward drive
	Reversing The Swing Position	19. Trunk 20. Arms 21. Shank (fr. leg) 22. Rear leg	unchanged counter action at maximum parallel to ground extending forcefully
	Push-Off Position	23. Trunk 24. Rear Legs 25. Shank (fr. leg) 26. Head	unchanged fully extension reaching forward eyes focused slightly ahead
	Touch Down Position	27. Trunk 28. Rear leg 29. Foot T.D.	unchanged passing front (now support) leg just behind center of gravity
	Extension (driving)	30. Head position 31. Arms 32. Starting angle 33. Front leg 34. Supporting leg	unchanged reversing motion of forward drive acute active knee lift full extension gradual transition into full sprint

## SUGGESTED BLOCK POSITIONING FOR DIFFERENT LEG LENGTHS

In the book "*Women's Hurdling: Novice to Champion*" author Christine Brooks [Leisure Press 1981] - recommends to start with blocks set at 55% of leg length for the placement of the front block, and 42% of leg length for the distance between blocks.

<i>Leg Lengths</i>	55%	42%
	Position of Front Block From the Starting Line	Distance Between Blocks
(Inches)/(Metric)	(Inches)/(Metric)	(Inches)/(Metric)
25.0/0.635	14.0/0.356	10.5/0.267
26.0/0.660	14.5/0.368	11.0/0.279
27.0/0.686	15.0/0.381	11.0/0.279
28.0/0.711	15.5/0.394	11.5/0.292
29.0/0.737	16.0/0.406	12.0/0.305
30.0/0.762	16.5/0.419	12.5/0.318
31.0/0.787	17.0/0.432	13.0/0.330
32.0/0.813	17.5/0.445	13.5/0.343
33.0/0.838	18.0/0.457	13.5/0.343
34.0/0.864	18.5/0.470	14.0/0.356
35.0/0.889	19.0/0.483	14.5/0.368
36.0/0.914	19.5/0.495	15.0/0.381
37.0/0.940	20.0/0.508	15.5/0.393
38.0/0.965	20.5/0.520	16.0/0.406
39.0/0.991	21.0/0.533	16.0/0.406
40.0/1.016	21.5/0.546	16.5/0.419
41.0/1.041	22.0/0.559	17.0/0.432

### HOW TO MEASURE LEG LENGTH

Leg length fairly easy to measure

- Locate the greater trochanter of the femur and place the end of the tape-measure here.
- Measure the distance from the greater Trochanter to the ground

