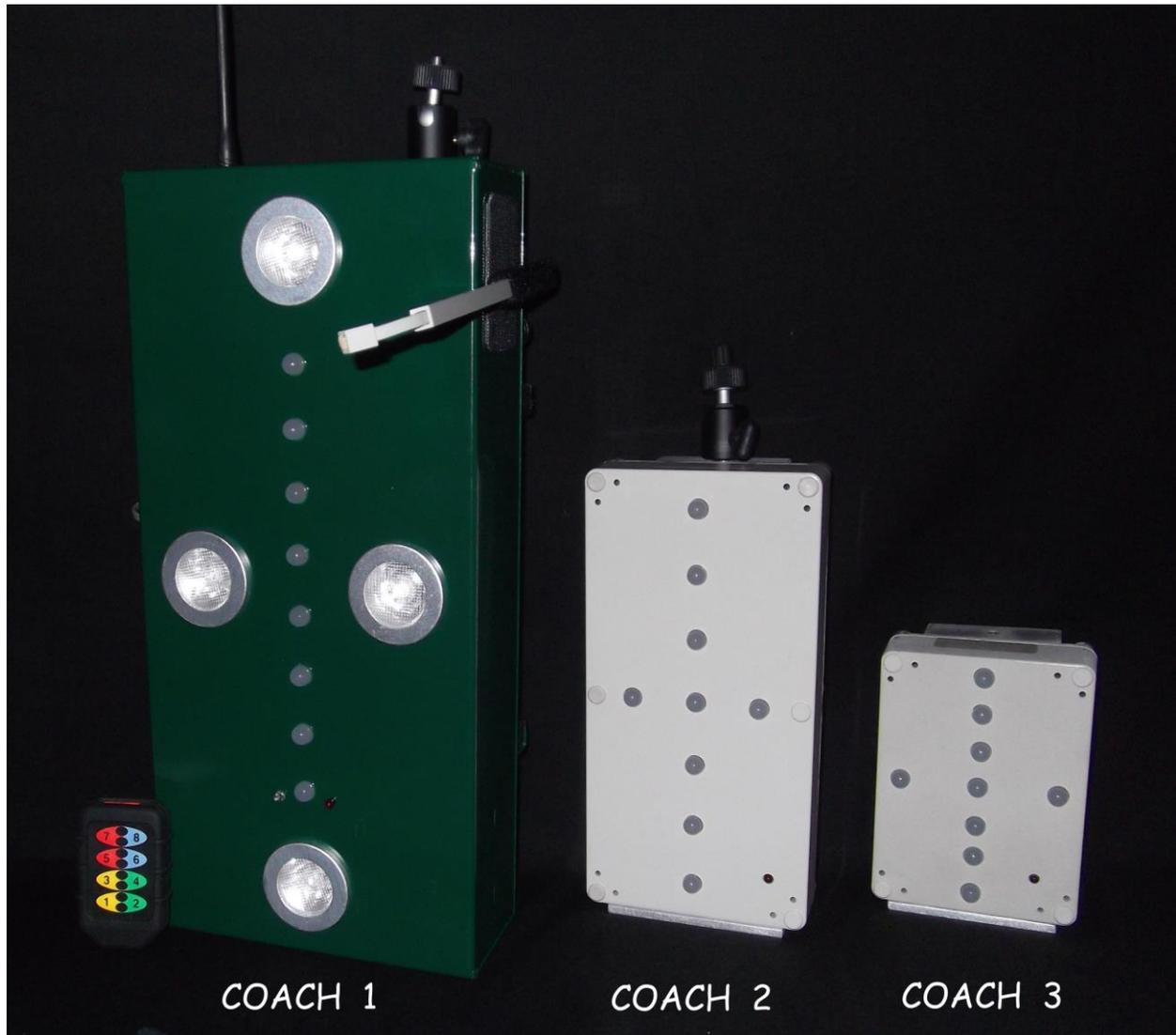


BASEBALL USERS MANUAL



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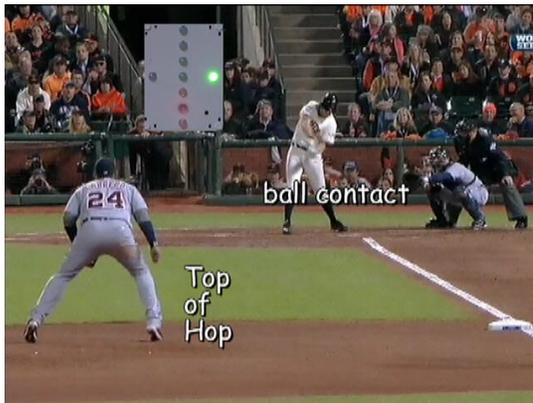
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INTRODUCTION

What factors make some individuals superior in skills during sporting events? This question has been asked by many trainers/coaches for as long as civilizations have existed.

The Split Step Coach does not address all the factors, but it does address the issue of timed movement; movement has been and is a core factor that can help dedicated athletes in any sport be the best they can be.

SSC trains to maximize the starting acceleration with resulting speeds that allow quicker positioning of the individual or athlete, and thus better control of muscle groups involved in executing a [swing](#), a kick, a [catch](#), a toss or other complex movements. A document on our [website](#) called the '[Fundamental Movement](#)' provides an in-depth look behind the SSC line of products (COACH 1, COACH 2, COACH 3).



Miguel Cabrera in World Series 2012



Barry Bonds at Home Run Derby

Directing our attention to the game of tennis, one might ask, "What are the fundamental movements of professional tennis players?"

Professional tennis players will perform the same basic movements on each and every ball hit by the offensive player (even if they cannot make it to the CENTER of possible returns) before the offensive player hits the ball. The execution of the split step in tennis during a 5 set match can be as high as 1000 per player. The defensive player is at a disadvantage when not being in the perfect position, but their best reaction is to execute the following moves.

1. Shortly before the offensive player hits the tennis ball, the defensive player or the player about to have the ball land in their court will have CENTERED or moved to the most likely spot where the opponent's ball will land.

2. As the offensive player's begins their swing to contact the ball, the defensive player will begin to load their legs for performing a HOP into the air.
3. Ball contact by the offensive player is an important time and the defensive player's goal is to be at the TOP of their HOP when the ball is struck.
4. Reading the direction of the ball coming off the offensive player's racket is a most important skill and the defensive player's goal is to determine the direction as they begin to descend from the TOP of the HOP to the tennis court. Timing is crucial for insuring the defensive player the best possible position for the opponent's shot.
5. The defensive player will always try (with some exceptions) and land on the foot that is away from the incoming ball so that gravity can help them accelerate as quickly as possible in the proper direction for the incoming ball.
6. After the defensive player gets near the hitting position they begin decelerating by taking shorter steps in preparation for their shot. Once the player hits the ball they can then recover from their shot and begin centering for the opponent's next shot.

Many sports including basketball, football, and soccer can have a slightly different aspect to consider when training *offensive* players. When a running back (offensive player) comes thru a hole and sees the line backer approaching, he will generally give some kind of fake and then rise into the air. Depending on the line backer's decision (move to left or move to right) the running back will want to land on the offside foot and move in the opposite direction.

The offensive athlete should train using the Split Step Coach (SSC) by moving in a direction opposite to the directional LEDs. For instance, if the right directional LED comes ON, the offensive player will want to move LEFT. SSC provides the athlete sequences of directional LEDs in which both forward and random lateral movements will test and improve the sensory-motor pathways.

Features & Differences of the Split Step Coach Series

COACH 1

Top of the line tool for indoor and outdoor training.

Features include:

1. Large Panel Display,
2. Sixteen Progressive-skill Drills
3. Three levels of difficulty
4. Remote Control
5. Battery operation with charger
6. Advanced Color Feature
7. iPad Option (call for information)
8. Video Option & Mount (call for information)

COACH 2

Middle of the line tool for indoor and limited outdoor training.

Features include:

1. Ten Progressive-skill Drills
2. Three levels of difficulty
3. Remote Control
4. Battery operation with charger
5. Advanced Color Option (call for information)
6. Additional Five Drill Option (call for information)
7. Camera Mount Option (call for information)

COACH 3

Economical tool for inside training.

Features include:

1. Ten Progressive-skill Drills
2. Three levels of difficulty
3. Manual Pushbutton Control
4. Battery operation with charger
5. Additional Five Drill Option (call for information)
6. Camera Mount Option (call for information)

SSC products emulate the movements and timing of athletes in many of today's sports. Furthermore they provide a platform by which the player can perform what Daniel Coyle, in his New York Times bestselling book '[The Talent Code](#)', describes as 'Deep Training'. Deep Training is where an athlete executes repetitively sport specific movements at controlled speeds, so that they can execute correctly 95% of the time. In so doing the sensory-motor pathways for remembering are greatly enhanced.

Training Advantages

1. Accelerates the training and skill building of an athlete
2. Enhances the training of the Split Step, an important move in most sports
3. Promotes better court or field coverage
4. Develops movements timed to the opponent's shot or other critical movements
5. Builds aerobic capacity while executing a timed stroke, kick or throw
6. Can be used with athletes before, during or after the introduction of strokes, kicks or throws
7. Stroke production and technique can also be practiced without having the skills required for hitting, catching, or kicking a real ball
8. Can be used on the field, on the grid-iron, in your driveway, or any open area
9. Precise measurements can be recorded with a video camera for evaluating athlete's progress within the 3 different levels of difficulty with 16 challenging drills.
10. Allows the athlete to train with the same drills at various speeds so that accuracy in execution can be assured before increasing difficulty.
11. The Advanced drills allow the athlete move to various locations on the field or court so that consecutive movements can be learned.

Fundamental movements of professional athletes

The following chart describes in more detail the possible movements between consecutive hits of a tennis ball. However, most sports can be dissected into the same or similar movements and Sport Split Step offers a Software Programming service in which a coach's special sport and special drills with their special timing can be included into the SSC software.

In this tennis example, the average times were obtained from a match between [Nadal and Monfils at the 2009 US Open](#). We will now correlate these movements to the events that occur when working with the Split Step Coach.

	player-1	player-2	
1	player hits ball	top of the hop	instant in time
2	time to recover	time to land	average 1.38 sec
3	time to center prepare & Start hop	time to ball	
4		time to swing	
5	top of the hop	player hits ball	
6	time to land	time to recover	average 1.38 sec
7	time to ball	time to center prepare & Start hop	
8	time to swing		
9	player hits ball	top of the hop	Instant in time

1. The Split Step Coach is built around the movements indicated in the above chart. On the front surface of the SSC, there is a vertical column of 5 RED LEDs that will begin to sequence in a downward direction as the defensive player recovers & centers (start of item 3 in the table for player-1).
2. At the end of item 4 all 5 RED LEDs turn OFF as player-1 starts to rise into the air (SSC emits an audible beep). Sometime between the end of item 4 and the 'Top of the Hop' some Directional LEDs will turn ON to indicate direction in which the player must move.
3. The Directional LEDs will remain ON as player-1 lands on the ground (end of item 6), the RED LEDs will now begin to sequence in an upward direction.
4. As the player runs to the hitting position for this shot (item 7) the RED LEDs continue to ripple upwards. When about 3 RED LEDs have turned ON the player should be starting their swing so that as the top RED LED turns ON, the player will be contacting the imaginary ball (i.e. at contact point); a 2nd audible beep will be emitted at this time.

5. Once the ball is struck, all RED and Directional LEDs will turn OFF (item 1, 9) and will remain OFF as the player recovers (item 2) and begins to center (item 3).
6. We have now arrived at the start of item 4 where-in we began preparing for the last hop, in other words as the RED LED's start the downward sequence.

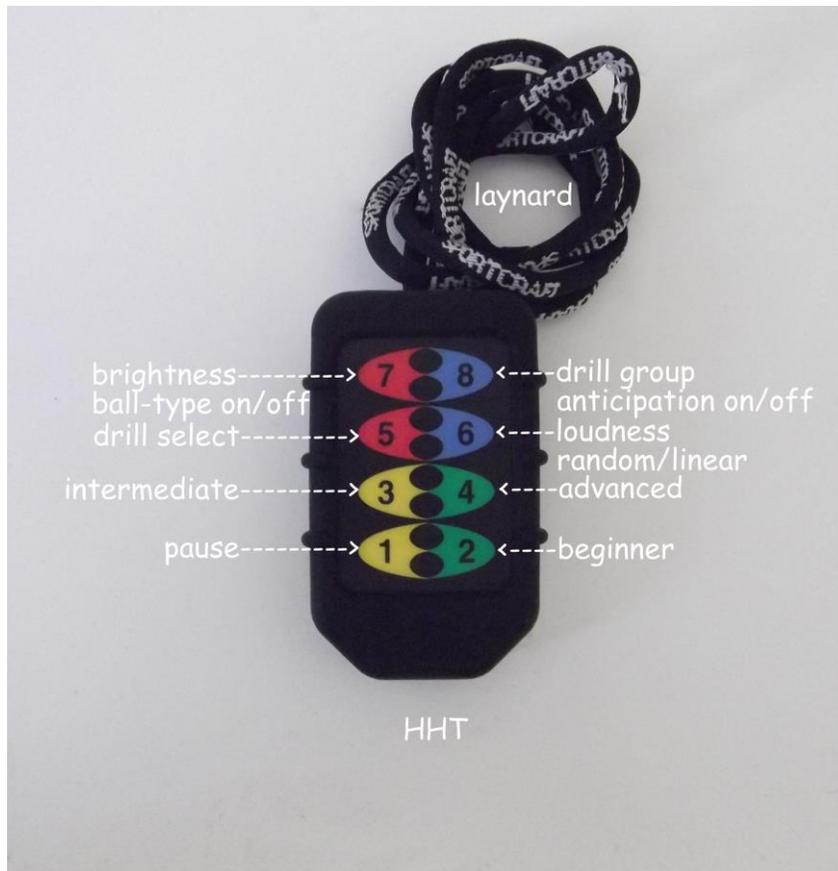


SPLIT STEP COACH

Setting up the COACH 2 Hardware

1. Unpack all of the ordered components: COACH 2 display panel, remote Hand Held Transmitter (HHT), Video Option (if ordered) and battery charger.
2. You might want to 'top off' the battery with an overnight charge before teaching a lesson; we ship with a fully charged battery which should run continuously for 16 hours.
3. Mount the Coach 2 display panel by hanging it from your roll-around ball cart, the net cord, a stable table, or medium/large sized tripod; typically 36" to 48" above the court or field makes for the most realistic viewing.
4. Coach 2 can be elevated by extending the tripod, or hanging it from the top of the tennis fence, thus allowing easy viewing for large groups. Coach 1 may be desirable for larger distances or larger groups; groups of up to 20 in number have been trained at one time for sports such as football & soccer using the tripod.
5. The panel's front surface should be aligned perpendicular to the athletes so that easy viewing of the LEDs from both sides of the field (or court); position players at 20 to 40 feet from the Coach 2 for proper viewing.
6. Power up the unit by using the switch on the rear of the chassis.
7. The default conditions after powering up are
 - a. Batting Drill 1
 - b. BEGINNER operation
 - c. Automatic sequencing of drills.

Using the Remote



Basic Key Functions

1. Button 1 will STOP (PAUSE) a drill, and then re-START at the beginning of drill.
2. Button 2 will select the lowest LEVEL of difficulty (Beginner).
3. Button 3 will select the next LEVEL of difficulty (Intermediate).
4. Button 4 will select the highest LEVEL of difficulty (Advanced).
5. Button 5 will sequence to the next DRILL.
6. Button 6 will cycle the buzzer loudness thru 4 different levels, including MUTE.
7. Button 7 will cycle the Directional LED brightness thru 4 different levels.
8. Button 8 will switch between the 5 Batting Drill 1 and the 5 Batting Drill 2 and the 5 Fielding Drills Option (if ordered).
9. Button 1 (press & release) followed by Button 8 (press & release) will toggle the Anticipation mode of operation to Reaction mode.
10. Button 1 (press & release) followed by Button 7 (press & release) will toggle between Normal and Advanced Color Mode of Operation (see this [document](#)).
11. Button 1 (press & release) followed by Button 6 (press & release) will toggle between LINEAR & RANDOM modes.

The attached lanyard on the HHT helps prevent accidental dropping of the device and possible resetting of the HHT address. When not around your neck you might consider attaching the HHT to your Split Step Coach or tripod.

General Operations

1. There are 5 different Batting 1 Drills (see section on Drill Descriptions).
2. There are 5 different Batting 2 drills.
3. In addition there are 5 Fielding Drills.
4. Remote button presses of 1/2 second duration will select or change the mode of operation; when button 5 is held down continuously the effect will simulate multiple button presses with ~1 second intervals while the drills sequence.
5. The user can stop the startup automatic sequencing of drills by pressing Button 5 on the Hand Held Transmitter (HHT) one time, which will select Drill #1 (TOP RED LED will flash along with what is called the operating mode) while keeping all other parameters the same.
6. Once Button 5 is pressed, Drill #1 will run continuously, until Button 1 (PAUSE) is pressed or another drill is selected by pressing Button 5.
7. The DRILL # selection can continue in this fashion thru DRILL #5 at which time another push would activate the automatic sequencing mode.
8. This sequence mode will automatically execute a Drill and then sequence to the next Drill (#1, #2, #3, #4, #5) and then repeat; this mode provides a good dynamic warm up for athletes arriving early for their lesson.
9. Again, to exit the automatic sequencing mode the user would press Button 5 one more time and Drill #1 will begin executing while all other selections remain at the previous selections.
10. All drill packages come in two flavors, with or without Anticipation RED LEDs, i.e. anticipation allows the RED LEDs to simulate an opponent's movements so that the athlete can respond appropriately.
11. You can select the various drill packages (Batting 1 Drills, Batting 2 Drills & Fielding Drills) by pressing and releasing Button 8 until the desired package is selected.
12. Pressing button 8 will change the drill group and the Directional LEDs will change to different colors when in the various groups (Green=>Batting 1 Drills, Yellow=>Batting 2 Drills, Red=>Fielding Drills); be careful not to confuse the status information with the colors when operating in the ball-type mode.
13. Selecting the ball-type operation (pause button then button 6) will allow the athlete to add another dimension of complexity for learning how to respond to different balls being hit by their opponent; RED balls => defensive response, YEL balls => rally ball, GRN balls => offensive response will be used for the Directional LEDs.

14. Any of the drills at any of the 3 different levels of difficulty can be either OPEN (random) or CLOSED (known sequence).
15. To toggle the OPEN/CLOSED mode press the pause button 1, then button 6; the LEFT DL will flash if the OPEN mode has been selected; no flash will occur if in the CLOSED mode.

The LEVELS of Drills vary in difficulty

1. BEGINNER: Lowest difficulty (slower tempo within & between shots)
2. INTERMEDIATE: moderate difficulty (faster tempo within & between shots)
3. ADVANCED: most difficult (fastest tempo within & between shots)

Recognizing the status of operation: DRILL, LEVEL and mode

1. BEGINNER => bottom Directional LED is ON
2. INTERMEDIATE => bottom & right Directional LEDs are ON
3. ADVANCED => bottom, right & top Directional LEDs are ON
4. DRILL #1 => top RED LED is ON
5. DRILL #2 => top 2 RED LEDs are ON
6. DRILL #3 thru DRILL #5 turn on a corresponding number of RED LEDs
7. Left Directional LED will be turned ON when different drill packages are selected, Green=>Batting 1 Drills, Red=>Batting 2 Drills, Yellow=>Fielding Drills
8. Left Directional LED will flash if in OPEN (random) mode, when a selection is made on the Remote Control.

S³ products and Tennis Ball Machines



SSC concepts being used with various ball machines

1. [Several ball machines](#) including the Sports Attack have been tested with the RED LED portion of the SSC and software and hardware adjustments made so that the ball is emitted when the player is at the top of the hop.
2. This combination of the RED LED portion of the SSC and ball machine allows the player to extend their 'SSC learned movements' to the next level of complexity, that of going thru a timed movement and hitting a real ball.
3. The Playmate ball machine has been setup to emulate many of the LEVELS and DRILLS used by the SSC, thus making for a powerful family of teaching tools. See the 3 Levels & Drills at the end of the manual; note that some minor settings will have to been changed because of variations within the ball machines.
4. The Playmate ball machine also has a RANDOM function that emulates the SSC RANDOM mode of operation for the more skilled players.
5. The same Video Option works for both the SSC & ball machine and can record both the player's movement and stroking/hitting skills, which can be analyzed to provide feedback to the player.
6. These types of feedback increase a player's motivation as they can see and measure their improvements against their previous executions.
7. Call (530-272-7345) for service information on interfacing to your Sports Attack, SAM or Matchmate ball machines.

Quick Guide for the COACH 2

Batting 1 Drills - GREEN

(A Sequence of Movements for **Batting**)

1. Vertical moving RED LEDs only (Timing swing for batters or hop for fielders)
2. Vertical moving RED LEDs & LEFT of strike zone (L) Green DL
3. Vertical moving RED LEDs & RIGHT of strike zone (R) Green DL
4. Vertical moving RED LEDs & TOP of strike zone (T) Green DL
5. Vertical moving RED LEDs & BOTTOM of strike zone (B) Green DL

Batting 2 Drills - RED

(A Sequence of Movements for **Batting**)

1. Vertical moving RED LEDs & L-R, R, L-R, L, L-R, R of strike zone
Green DLs
2. Vertical moving RED LEDs & B-R, T-R, B-L, T-L, B-R, T-R of strike
zone Green DLs
3. Vertical moving RED LEDs & T, B, R, L, T, B of strike zone Green DLs
4. Vertical moving RED LEDs & B-L, T-R, B-R, T-L, B-L, T-R of strike
zone Green DLs
5. Vertical moving RED LEDs & B-R, T-R, B-L, L, R, L-R of strike zone
Green DLs

Fielding 3 Drills - YELLOW

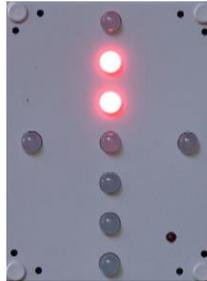
(A Sequence of Movements for **Fielding**)

1. Vertical moving RED LEDs & L-R, R, L-R, L, L-R, R of player Green
DLs
2. Vertical moving RED LEDs & B-R, T-R, B-L, T-L, B-R, T-R of player
Green DLs
3. Vertical moving RED LEDs & T, B, R, L, T, B of player Green DLs
4. Vertical moving RED LEDs & B-L, T-R, B-R, T-L, B-L, T-R of player
Green DLs
5. Vertical moving RED LEDs & B-R, T-R, B-L, L, R, L-R of player
Green DLs

Fundamental movements for BATTERS using the SSC2

The following list describes in more detail the relationship between the Split Step Coach (SSC) LEDs and the desired movements for batters.

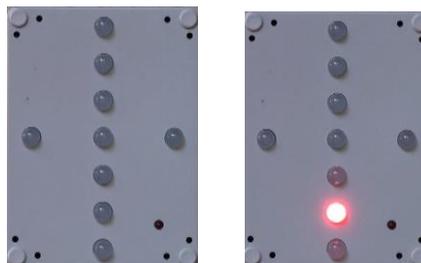
1. On the front surface of the SSC, there is a vertical column of RED LEDs that will begin to sequence in a downward direction as the pitcher begins their windup and the batter prepares for loading the back side foot.



2. When all the vertical RED LEDs turn ON the batter should be ready to begin their stride forward as the pitcher has just completed his windup and is about to release the pitch.



3. After all the LEDs go OFF a beep will occur and the pitcher releases the ball; as the vertical RED LEDs begin moving upward, the batter begins their stride forward.



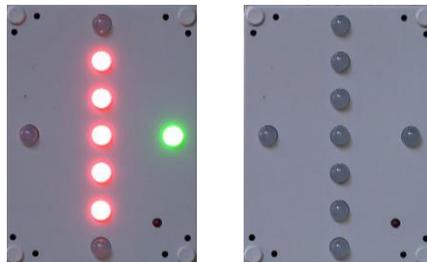
4. As the pitched ball proceeds toward the batter vertical RED LEDs will begin to sequence upward and the DLs will come ON as the batter begin the loading for the swing.



5. Reading the ball direction indicated by the DLs (i.e. pitched ball) is a most important skill to be learned and the batter must be able to read both the type of pitch and strike zone location as the swing continues.
6. In fact, determining the direction early enough so that the can adjust their swing to the pitched ball.



7. The Green Directional LEDs (DLs) and RED LEDs will be turned OFF as a beep occurs (imaginary ball strikes the bat); they will remain OFF until the next sequence begins (i.e. pitcher begins their next windup).



Fundamental movements for in/out-FIELDERS using SSC2

The following list describes in more detail the relationship between the Split Step Coach (SSC) LEDs and the desired movements for **fielders**.

1. On the front surface of the SSC, there is a vertical column of RED LEDs that will begin to sequence in a downward direction as the pitcher begins their windup and the batter prepares for their back foot loading sequence.



2. When all the RED LEDs turn ON the fielder should be fully loaded and ready to begin their vertical hop and rise into the air.



3. A beep will occur and all of the RED LEDs will turn OFF as the fielder begins to rise into the air; the goal of the fielder is to be at the TOP of their HOP when the bat contacts the ball.



4. Sometime between when the fielder starts to leave the ground and the 'Top of the Hop', various Green Directional LEDs (DLs) will turn ON to indicate one of 8 possible directions in which the fielder must move.



5. The challenge and skill that must be developed is to have the fielder determine the direction of the ball before landing on the ground.
6. In fact, determining the direction early enough so that the fielder can land on the offside foot allowing gravity to help accelerate them in the direction of the ball.
7. The Green Directional LEDs (DLs) will remain ON as fielder lands on the ground and the vertical RED LEDs will begin to sequence in an upward direction.



8. As the player runs to the fielding position the RED LEDs continue to ripple upwards; when about $\frac{1}{2}$ of the RED LEDs have turned ON the fielder should be nearing the point of their catch of the imaginary ball.



9. Just after all vertical RED LEDs turn ON, the Green Directional LEDs, and RED LEDs will be turned OFF and another audible beep will occur as the fielder releases the throw.



'Mating' Additional or Replacement Remote

'Mating' a replacement Hand Held Transmitter (HHT) is necessary for all remotes not received with the original purchase. The HHT has a small CR2032 battery that may need replacing every 2 years depending on your usage. Mating a new remote can be accomplished by following these steps:

1. Turn the power switch OFF of the SSC2.
2. Remove the 6 screws on the back of the unit and carefully separate and turn the back panel upside down and towards the power switch side.
3. Turn the COACH 2 power switch ON.
4. Locate pushbutton switch S2 at the top right side of the Printed Circuit Board near the antenna at the top of the chassis.
5. Press the button on the switch S2 for 1 second and then release the pushbutton.
6. Quickly press and hold for 1 sec, each of the buttons on the remote (8 buttons for the HHT); this button pushing operation must be completed within 15 sec for all the buttons to properly 'mate'.
7. Test the new remote and see if it will control the COACH 2, if not repeat the steps 5 thru 6.
8. Turn the SSC2 power switch to OFF, then carefully rotate the back panel into place, being sure the wires are inside so that the rear panel can be easily closed.
9. Install the 6 screws into the rear panel.
10. Call factory (530-272-7345) for further assistance with any questions concerning the remotes.

Limited 3 Year Warranty

Sports Split Step provides product purchasers with a limited 3 year warranty for all products.

Limited 3 Year Warranty Clauses

1. In order to be eligible for Sports Split Step Limited 3 Year Warranty, product registration must be completed by the purchaser. The warranty of the purchased product is activated from the completion date of the product registration at Sports Split Step or from an authorized distributor. Sports Split Step reserves the right to determine the eligibility of the product registration if the registration process is delayed by the purchaser for more than three months after the original purchase date. Satisfactory proof is required to claim the warranty; for example, the invoice from the initial purchase.
2. The Limited 3 Year Warranty is for the original purchaser only. In the event of a sale or product transfer by the original purchaser to a third party, the warranty period shall be as described in the “After the Limited 3 Year Warranty Period”.
3. If the product is operated under a normal operating environment during the warranty period and a malfunction is not caused by external or internal self-assembly, Sports Split Step reserves the right to exchange components, repair, or substitute the appropriate types of products at its discretion.
4. All replaced parts will be brand new parts. These can include but are not limited to: new components, modules, or substitute products for repairing.
5. When the product has exceeded the warranty period, warranty clauses, or is otherwise inapplicable to warranty (please refer to the “After the Limited 3 Year Warranty” section), maintenance service, replacement, shipment, and any other related charges might occur.

Other Exception Clauses

Sports Split Step guarantees its products against defects in materials and workmanship under limited conditions. However, under the following exceptions, Sports Split Step has no liability to provide warranty services for the repair or maintenance without charge.

1. Damages caused by accidental events, damages due to the human force or self-assembly, damages caused by negligence of maintenance or modification behaviors without authorized technical support.
2. Damages resulting from any natural disaster.
3. The appearance of a product due to dust, dirt and age, normal wear of mechanical components and accessories outside of the product itself.
4. Purchasers are responsible to pack the repair product in good condition and ship it to the original distributor/representative. Shipping charges must be paid by the sender.

After the Limited 3 Year Warranty Period

If the received products have exceeded the warranty time, Sports Split Step will still provide the related repair and or maintenance services. However, the owners of the products are responsible for the repair and or maintenance charges, the return shipping charges and any additional costs.

Trouble Shooting the Split Step Coach

SYMPTOMS	ACTIONS
<ol style="list-style-type: none"> 1. Red or Yellow LEDs don't flash 2.. RED Battery LED is ON 3. Camera LED doesn't flash 4. Buzzer doesn't beep 5. Red LEDs flash, but Yellow LED only blink 6.Video Option does not work 7. Replacement HHT does not work 8. LEDs are locked and not cycling 	<ol style="list-style-type: none"> 1. Verify that power switch on side of COACH 1 is ON 2. Battery may need charging 3. Check that the plug is fully inserted into RJ11 connector 4. Press button 6 on the HHT 5. Battery may need charging 6. Check that the plug is fully inserted into RJ11 connector 7. We might need to <u>mate</u> the HHT to the COACH 1 8. Cycle the power switch

Call Factory (530-272-7345) for any questions you might encounter.

