Demonstrate the Key Bowling Fundamentals Needed to Execute the Perfect Strike Shot

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HPT 6200 Product & Design
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Dedication:
This training manual is written in memory of a great bowler and sports enthusiast, Ollie Jackson, who loved and played the sport for over five (5) decades.
Welcome:
Welcome to the training camp on Demonstrating the Key Fundamentals Needed to Execute the Perfect Strike Shot. This is an entry level training for anyone (referred to as “bowler” from this point forth) who enjoys the game of bowling and is interested in learning how to use the key bowling fundamentals to execute the perfect strike shot to improve his/her game scores.

While these key fundamentals can be learned by very young bowlers, this lesson is targeted at bowlers (beginners or experienced) who are 12 years of age and older, as the training delivery system (the training manual) requires reading and comprehension at the 7th grade level.

Entry Level Skills: While learning the key fundamentals needed to execute the perfect strike shot can be learned by anyone, for this training, learners (bowlers) will need to meet the following criteria:

- No physical or mental limitations that would prevent the bowler from performing the key fundamentals of bowling
- Can identify the basic concept of bowling
- Can read and comprehend at a 7th grade level
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Introduction: With over 25 years of experience in the world of bowling and spending an infinite amount of time working on perfecting my own bowling game, it has become clear that the majority of bowlers need help achieving optimal performance levels in the game of bowling and this training will serve to help them do just that.

In my 25-year career as a competitive bowler, I have traveled all around the country in my quest for competition and victory. Subsequently, I have earned a variety of high-level United States Bowling Congress (USBC) achievements ranging from local to national levels:

- **USBC City of Chicago (including all surrounding suburbs) Tournament:**
  - 1st Place Team Title
  - 3rd Place individual All-Events

- **USBC Indiana Tri-State Tournament:**
  - 1st Place Mixed Doubles Title

- **USBC Evansville Indiana Ladies State Tournament (2 top ten finishes in two different years):**
  - 2nd Place Doubles
  - 10th Place Doubles

- **USBC Ladies National Tournament:**
  - 2nd Place Doubles
Introduction, continued:
With this said, I have an excellent understanding of the key fundamentals needed to execute the perfect strike shot and I am even more familiar with the need for bowlers (social and organized) to optimize their striking power on the bowling lanes. Professional and good amateur bowlers experience 215 to 240 pins fall on average per game while under-performing amateurs and social bowlers experience far less, 60 – 170 pins fall per game.

This training seeks to bridge this enormous performance gap because, at the end of the day, both organized and social bowlers want high scores. When you lace up your bowling shoes and pick up your bowling ball, you want to see the bowling ball go down the bowling lane with speed, energy and tons of strike power, sending the bowling pins directly into orbit. This lesson, if practiced faithfully, will have you dominating your competitors in no time. Wagering with family and friends for the cost of bowling games and beers will leave your pockets very heavy at the end of an enjoyable evening of bowling.
Learning Objectives:
Upon completing this lesson, you will be able to:

- Define the key terms associated with the fundamentals of bowling:
- Locate a local pro shop and bowling center
- Determine the difference between good and poor ball fit
- Determine the difference between good and poor arm swing
- Demonstrate a proper arm swing
- Demonstrate comfortable footwork timing
- Rotate the bowling ball
- Execute proper thumb timing
- Execute a strong follow through
- Locate target and approach aids
- Make adjustments to lane oil patterns

Lesson Outline:
Unit 1: Getting equipped to bowl
Unit 2: Demonstrate proper arm swing
Unit 3: Define and demonstrate comfortable footwork timing
Unit 4: Define and demonstrate an effective release
Unit 5: Make adjustments to lane oil patterns
Getting Equipped to Bowl

Without question, the single most important fundamental of bowling is getting properly fitted for a bowling ball; this is clearly where it all starts. However, how you choose to get fitted is totally up to you. You can choose to get fitted at a local professional bowling pro shop or simply walk into your local bowling center where you can rent bowling shoes and utilize free community bowling balls. Mind you, there are pros and cons to doing it both ways, depending on your circumstances. For this lesson, you have the liberty to pick your own poison.

The Choice is YOURS

Pro Shop

Bowling Center
Great, let’s get started !!! The first step is to locate a bowling pro shop in your area. This can be done in a few different ways:

- If you know someone who bowls in a league, you can ask them which pro shop they use.
- If not, you can use your local hardcopy telephone book or go online and visit www.yellowpages.com
- For the purposes of this lesson, we will use Brunswick’s virtual bowling pro shop locator: http://www.bowlwithbrunswick.com/
## Getting Equipped to Bowl

**Bowling Pro Shop,** locate a local pro shop

**Bad Ass – high powered rotations**

### Instructions to Access Brunswick’s Bowling Portal

http://www.bowlwithbrunswick.com/

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<td>Step 3</td>
<td>At the top of the Brunswick home page, locate the light-blue hyperlink “Find a Pro Shop” and click/touch it</td>
</tr>
<tr>
<td>Step 4</td>
<td>In the white text box, type your zip code and hit the enter key or click on the “Search Pro Shops” hyperlink</td>
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Getting Equipped to Bowl

Bowling Pro Shop, locate a local pro shop

This is a screenshot of Brunswick’s bowling portal home page. Notice the “light-blue” hyperlinks shown at the top of the page.
Getting Equipped to Bowl

Bowling Pro Shop, locate a local pro shop

Once you enter your zip and click/touch the search button, your pro shop results should appear. As an example, I entered my home zip code and the results are shown below.

Contact a pro shop, speak with a drilling expert, and set up an appointment for a personal consultation.
Getting Equipped to Bowl

Bowling Pro Shop, locate a local pro shop

When you walk into the pro shop, it will look something like the picture shown below. There will be many options to choose from, as bowling pro shops carry many different bowling accessories to help the bowler optimize his/her bowling scores.
Getting Equipped to Bowl

Bowling Pro Shop, consult with a drilling expert

Now, you are ready to meet your personal drilling expert !!!

Pictured above is my drilling expert, Wally Galka of Galka’s Pro Shop located inside of Plaza Bowling Center in Highland, Indiana. Wally had drilled my bowling balls for over 20 years and I owe a great deal of my bowling success to his high-end expertise.
As discussed earlier, getting properly fitted for a bowling ball is, by far, the most important fundamental of bowling. It is very difficult and, in some cases, painful trying to execute the perfect strike shot with an ill-fitted bowling ball. Over time, using an ill-fitted bowling ball can cause bodily damage to, not just your hands, but your arms, shoulder, back, legs, and knees. With this in mind, if you plan to bowl more than once a year, it is best to get equipped to bowl at a professional pro shop. That way, you can achieve a consistent feel every time you need to use your equipment and this will translate directly to safety and consistent outcomes in your bowling game.
Getting Equipped to Bowl

Bowling Pro Shop, consult with a drilling expert

The Consultation:

To further stress the importance of getting professionally fitted for your bowling equipment, consider some of the following images. These images are the results of bowling with ill-fitted bowling balls. The black marks on the images indicate pathological calluses and blisters and the likely causes of these poor fit issues.

Broken Blood Vessels Underneath Finger Nails
• Span too Long
• Hole Too Tight
• Insert Too Tight
• Excessive Forward Pitch

Calluses on Fingers
• Span Too Long
• Hole Too Tight
• Insert Too Tight
• Excessive Forward Pitch
Getting Equipped to Bowl

Bowling Pro Shop, consult with a drilling expert

The Consultation:

Calluses on top of thumb:
- Excessive Reverse Pitch
- Span Too Short or Too Long
- Hole Too Big

Callus at bottom of thumb:
- Span Too Short or Too Long
- Hole Needs More Bevel
- Hole Too Big

Calluses on side of thumb:
- A - Span Too Short
- A - Excessive Reverse Pitch
- B - Excessive Left Pitch
- B - Hole Too Small
Getting Equipped to Bowl

Bowling Pro Shop, consult with a drilling expert

The Consultation:

When getting equipped to bowl at a professional pro shop, these ill-fit issues can be avoided. However, if you choose to get fitted at the bowling center (using community bowling balls), you are at risk for calluses, blisters and more.

During the consultation with a professional ball driller, all of these fit issues are discussed as well as other products and services that will serve to be helpful in helping you reach your goal — “throwing strikes” !!!

While bowlers use lots of equipment for comfortable and consistency during the bowling process, the three (3) mandatory items are: The bowling ball, bag and shoes. In addition to the mandatory equipment, all bowlers should be prepared for body and climate changes that will effect the fit of the bowling ball and the surface of the bowling shoes.
Getting Equipped to Bowl

In addition to bowling balls, shoes and bags, pro shops carry lots of bowling equipment (accessories). And it is in the best interest of the bowler to equip him/herself with a bowler’s first aid kit. Listed below are some of the items that are included in the bowler’s first aid kit.

- Ball tap (creates better thumb hole fit)
- Grip powder sacks (creates more finger grip)
- Easy Slide powder bags (creates more finger slip)
- Thumb Sleeve Patches (protects thumb skin)
Getting Equipped to Bowl

Bowling Pro Shop, consult with a drilling expert

- Shoe brush (cleans bottom of shoes)

- Scissors (cuts and lifts tape)

- Ball Sling (polishes and holds balls)

- Bowling towel (cleans balls)
Once your consultation is complete, it is time to get fitted. When you are getting fitted for equipment at a pro shop, the process itself is much easier; the professional ball driller does all the work for you. Getting fitted for a bowling bag and shoes is simple enough: You look at the selections; evaluate them; pick the desired size; and make a decision. Conversely, getting fitted for the ball is much more involved. I will save you the technicalities because there is much more than meets the eye when considering this process. What is simple to know are the five (5) key factors to consider when getting fitted for a bowling ball:

- **Weight** of the ball
- **Size**, **span** and **pitch** of the holes
- **Grip** (conventional or fingertip)
Getting Equipped to Bowl

Bowling Pro Shop, getting fitted for ball, bag and shoes:

**Ball Weight:** The general rule is that the weight of your bowling ball should not exceed 10% of your body weight. This is typically a good rule to consider for most beginner bowlers but not for all. I am a perfect example; when I started bowling, my first bowling ball weighed 16 pounds (lbs.) and I weighed about 130 lbs. at the time. Because the ball was professionally drilled and fitted to my hand, rolling a 16-pound bowling ball down the lane was never a stressful event. And today, most women (amateur and professional) bowl with 14 or 15-pound balls; I personally dropped to a more comfortable weight (15 lbs.) over 15 years ago.

**Hole Size:** The size of the holes in your bowling ball will be determined by the size of your fingers (thumb and two (2) middle fingers). Ideally, you want your finger holes to fit snug but not tight. Holes that are too tight or loose will prohibit you from exiting the bowling ball properly. Loose holes will cause you to drop the ball off your hand too soon and tight holes will cause you to stick (hang on) in the ball too long.
Getting Equipped to Bowl

The apparatus shown above is the hand measuring tool used by professional drillers as they design the layout specifications for your bowling ball. From this tool, they can determine and align your hole size, pitch, span and grip.

**Hole Span:** Your hole span is determined by the length of your hand in conjunction with your choice of grip (conventional or fingertip). It is the relationship (the distance) between your thumb and your two (2) middle fingers. The bowling ball should rest flat and comfortably in the palm of your hand, not too stretched or crunched. The images below are excellent illustrations of a flat and comfortable span.
Hole Pitch: As with the span, the pitch is an important factor to consider when drilling holes into a bowling ball. The pitch is the direction in which the holes get drilled. There are 5 different pitches (directions) to consider when drilling holes:

- Zero
- Forward
- Reverse
- Right Lateral
- Left Lateral

USBC (2013) illustrates: To better understand the concept of forward and reverse pitch, we can use the analogy of holding a basketball (reverse pitch) versus a softball (forward pitch). Holding each of these objects with the palm facing the floor is very different. The softball is easy to hold as the hand will be in more of a closed position. It will obviously be more difficult to maintain a grip on the basketball as the hand will be in a more open position. (p. 95) Translation, more reverse = quicker thumb release and more forward = slower thumb release.
You typically do not have to worry too much about pitch changes unless there are changes in your game. **Examples** – reasons for possible pitch changes are equated to changes in:

- Release
- Timing
- Weight Change/Growth
- Ability
- Age

USBC (2013) illustrates: Lateral pitch refers to the direction either right or left from the center of the ball. This pitch is used primarily for comfort and for ease of release and is related to the flexibility of the athlete’s hand and style of release. (p. 95)
Grip (Conventional or Fingertip: The grip is another key factor to consider when getting fitted for your bowling ball. The difference between a conventional and fingertip grip is illustrated in the diagram below. The finger joint nearest the palm of your hand (to the right of the black arrow in the diagram below) indicates a conventional grip. The finger joint nearest the finger nail bed (left of the arrow) indicates a fingertip grip. With a conventional grip, your two (2) middle fingers go down into the bowling ball holes and stop just before the joint nearest the palm. With a fingertip grip, the fingers stop just before the joint nearest the finger nail bed.

With a conventional grip, the bowler has more control over the ball during the swing and the release. Conversely, with a fingertip grip, the bowler experiences less control yet more ball energy and movement upon release. Beginner bowlers should start with a conventional grip until they can properly demonstrate the key fundamentals of bowling.
Getting Equipped to Bowl

Bowling Pro Shop, pay for bowling equipment:

Now that you have located a pro shop in your area; consulted with a drilling expert; and got fitted for a bowling ball, bag and shoes, the only thing left to do is pay for your bowling equipment selections.

Bowling pro shops have made this process very easy. For your convenience, most pro shops accept a variety of payments. Most pro shops accept Visa, Master Card and, of course, cash payments. Just FYI – most of them do not accept personal or business checks.

Let us review what we have learned
Getting Equipped to Bowl

Bowling Pro Shop:

1. What are the methods that can be used to locate a pro shop in your area?

2. As a result of a consultation with a drilling expert, what bowling products are mandatory for a bowler to have in order to bowl?

3. What is the most important fundamental to consider when executing the perfect strike shot?

4. Name four (4) body parts that can be damaged as a result of bowling with an ill-fitted bowling ball?

5. When getting fitted for a bowling ball, list the five (5) key factors to consider?

6. What forms of payment do pro shops typically accept (check all that applies)?
   a) Checks
   b) Visa
   c) Master Card
   d) Cash

Checking Your Understanding:
(answers to questions can be found in the back of the manual)
Getting Equipped to Bowl

Bowling Center, locate a bowling center:

Getting equipped to bowl at the bowling center is a much simpler process. But first, you must locate a bowling center in your area. To do so, you can use a process similar to that of locating a local pro shop. If you do not know where the local bowling center is in your area, you can:

- Ask someone
- Use a phonebook or go online and visit www.yellowpages.com
- Use www.gobowling.com bowling center locator

For the purposes of this lesson, we will use the www.gobowling.com website.
Getting Equipped to Bowl

Instructions to Access Portal
http://www.gobowling.com

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<tr>
<td>Step 3</td>
<td>Locate the red ribbon and click on the “Find a Center” link</td>
</tr>
<tr>
<td>Step 4</td>
<td>In the white text box, type your zip code and hit the enter key or click on the Red “Search” hyperlink</td>
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Bowling Center, locate a bowling center:

Let the Games Begin!!!
Getting Equipped to Bowl

Bowling Center, locate a bowling center:

The image below is a screenshot of the www.gobowling.com home page.

Notice the “Find a Center” hyperlink in the center on the red ribbon.
Getting Equipped to Bowl

Bowling Center, locate a bowling center:

Once you enter your zip code and hit enter or search, your search results will appear. Scroll down, past the map, to see your search results. As an example, I entered my zip code and attached the screenshot below.
The good thing about getting equipped to bowl at the bowling center is that it is pretty simple; it does not require any preplanning and the process is quick. Your equipment decisions happen at the time you decide to go bowling. When you decide to go bowling, simply walk into your local bowling center, look for the customer service/front desk area and consult with the customer service agent.

FYI – The front desk/counter is where most bowling centers store and/or rent their bowling shoes. You can actually see some of the bowling shoes in the background of the image listed above. On the next page, I will show you a close up shot.
Getting Equipped to Bowl

The front desk is where you can rent your bowling lanes and shoes. If you are getting equipped to bowl in the bowling center, the only equipment needed are bowling ball and shoes. No bowling bag is needed as you will not be transporting your equipment. In a bowling center, bowling balls are free but shoes must be rented. The average cost for renting bowling shoes is around $3.00. However, to be on the safe side, make sure you have at least $5.00 to rent shoes.

The customer service agent will ask you what size shoes you need and then he/she will provide you with the size you request. However, it will be necessary to try the shoes on before leaving the front desk. Bowling shoe sizes differ greatly depending on the make and model. So, save yourself a trip of having to return to the front desk to get a replacement size if the shoes do not fit.
While bowlers can use the community bowling ball at no charge (free, using an honor system), that is not the case with bowling shoes. In addition to the price for rental, many bowling centers require that bowlers leave some form of collateral at the front desk:

- One of their personal shoes
- $10 deposit
- State ID
- Driver’s License
Now that you have located the bowling balls, let’s get fitted for one. When getting fitted in the bowling center, there are 2 key factors to consider:

- Ball Weight
- Finger Comfort

If you choose to use community bowling ball in the bowling center to get equipped to bowl, your comfort options are compromised, as you must select whatever equipment the bowling center has available. With this in mind, you should only concern yourself with the ball weight and finger comfort.
Let’s determine the fingers comfort:

1. Pick up a bowling ball from the rack
2. Hold it in your non-dominate hand
3. With your dominate hand, stick your two (2) middle fingers into the top holes of the ball and you thumb in the hole just beneath. See images above and below for examples.

The holes should be snug but not tight; practice putting your fingers in and out of the ball to make sure the fit is comfortable. If the finger fit is good, let’s determine the weight comfort. If the finger fit is not good, try the finger fit with another ball.
Getting Equipped to Bowl

Bowling Center, determine comfortable ball weight:

**Pendulum Swing Motion**

Determine the weight comfort:

1. Put the fingers (dominate hand) into the ball
2. Drop your dominate arm to your side with your fingers still in the ball
3. Swing your dominate arm back and forward (pendulum motion)

If the ball weight does not pull down on your shoulder too much, the weight should be fine. If there is too much pull or discomfort on your shoulder, arm or fingers, try another ball. If ball weight and finger comfort have been achieved, you are officially equipped to bowl !!!
Checking Your Understanding:
(answers to questions can be found in the back of the manual)

1. What are the methods that can be used to locate a bowling center in your area?

2. Where are the bowling shoes located in a bowling center?

3. Where are the bowling balls located in a bowling center?

4. Do you need to try on bowling shoe to determine the fit?
   a) Yes
   b) No

5. Upon renting bowling shoes, what must a renter leave at the counter as collateral (select all that may apply)?
   a) One of your shoes
   b) A $10.00 deposit
   c) Your driver’s license
   d) Your state ID
6. To rent bowling shoes, you generally need how much money?
$10.00
$6.00
$5.00
$2.00

7. Which three (3) fingers do you insert into the ball to determine comfort for fingers?

8. Swinging the ball backward and forward helps to determine What?

9. When determining the ball fit in a bowling center, what are the two (2) key factors to consider?
   a) Shoulder and knee comfort
   b) Whist and weight comfort
   c) Fingers and weight comfort
   d) Back and arm comfort
Demonstrate Proper Armswing

Armswing, defined, aligned, fluent

Now that we are properly equipped to bowl, we can start to define and demonstrate the physical fundamentals needed to execute the perfect strike shot.

Per USBC (2013), The armswing is one of the most important factors in developing accuracy in an bowler’s game. Armswing is defined as the bowler’s ability to let gravity do the work, by allowing the arm to swing freely and naturally from the shoulder. Bowlers should resist the temptation to physically control (muscle) the direction of the armswing.

Vertical Swing Plane

The quickest way to establish proper arm swing is to always remember to do three (3) things:

1. Lock the elbow, creates a straight and firm arm alignment

2. Move the ball along the vertical plane: The height of the ball start should be consistent with the height of the ball placement in the stance. If the ball is held waist high or lower, it should move out at the same height. If the ball is held higher (near the chest), the ball movement should push outward, chest high.

3. The Swing should have continual movement, free and fluent, like a pendulum swing.
Demonstrate Proper Armswing

Armswing, aligned:

Shown below are additional images, front and back views, so you can better understand what a perfectly aligned swing armswing looks like.

In the first (1) image, the bowler started the armswing inside the armswing plane.

The second (2) image reveals the bowler starting the armswing far outside of the armswing plane.

In the third (3) image, the bowler is demonstrating perfectly aligned armswing.

The last two images (4 and 5) are front views of poor arm alignment.
Armswing, develop free, fluent swing:

Armswing Shapes:
The shape of the armswing is arbitrary, subject to the bowler’s choice and comfort. While anyone can have traits of different swing shapes, it is important to be able to identify these traits. Armswing shapes are determined by the top of the backswing height and posture of the bowler as he/she goes into the finish position at the foul line. The three (3) types of armswing shapes are:

**Flat** - The flat swing shape swing is generally a lower backswing height with the upper-body posture usually finishing in an upright position. (USBC, 2013, p. 117)

**Rounded** - The rounded swing shape is generally shoulder height with the upper-body posture usually being slightly forward. (USBC, 2013, p. 117)
Demonstrate Proper Armswing

Armswing, develop free, fluent swing:

**Steep** - The steep swing generally has a higher backswing and athletes usually have extreme forward body posture. At times, you also will see the elbow bend prior to the release. (USBC, 2013, p. 118)

Regardless of which armswing shape you decide is most comfortable for you, what is most important to remember about developing the armswing is the fluency of the swing. Make sure you let gravity do the work by developing a free, fluent, pendulum-style armswing.

**Pendulum Swing Motion**
Develop Consistent Armswing Speed:
The last thing to consider when demonstrating proper armswing is the development of a consistent armswing speed. Primarily, the armswing speed is determined by the average speed of the ball which is a number that factors the initial launch speed (when your ball first exits your hand) and the final speed the ball is traveling as it impacts the pins. The amount of axis tilt (the amount of side spin that you put on the bowling ball) will either add or subtract from the overall value of the ball speed. More axis tilt = more speed. Less axis tilt = less speed.

Again, I will spare you the technicalities and get straight to the point. All of the speed, axis tilt and ball rotations are the results of using gravity to transport energy from the bowler’s arm to the bowling ball. So, the more free, fluent and firm the armswing is, the greater the energy transporter. In layman terms, let gravity do its job!!!
1. In your own words, define what is meant by the term arm swing?

2. Name the three (3) types of arm swing shapes?

3. The best way to identify a free, fluent arm swing is to liken the arm swing to a?
   a) Clock
   b) A underhand pitch
   c) A pendulum
   d) Spiraled football

What is the source of the arm swing’s energy?

Demonstrating a proper arm swing is the most important fundament for creating accuracy in a bowler’s game?
   a) Yes
   b) No

(answers to questions can be found in the back of the manual)
Demonstrate Comfortable Footwork Timing

Footwork Timing, defined:

Now that we have demonstrated proper armswing, let us define and demonstrate comfortable footwork timing (the bowling footsteps), better known as timing. The armswing and footwork timing go hand-in-hand. Together, they represent the method that bowlers use to advance themselves (walk to the foul line) and be in a position to execute the perfect strike shot (throwing the bowling ball down the bowling lane). A good definition for footwork is: The bowling footsteps that are used to advance the bowler to the foul line. And when combined with its congruent partner (the armswing), they represent the bowling method called timing.

If you are a bowler, the phrase – “Timing is Everything” is not merely an over-used cliché; the fundamental (footwork timing) is the Bible of bowling fundamentals. Footwork timing can be credited for the execution of both good and bad shots; if your footwork timing is suffering, your whole bowling game is suffering. 😊
Demonstrate Comfortable Footwork Timing

Footwork defined, 4 or 5-Step Approaches:

A bowler’s footwork timing is like a bowler’s DNA, it is unique to each bowler. And there are no hard rules for selecting a footwork approach; most bowlers use the 4 or 5 step approach but there are bowlers who use 6, 7 or even 8 steps in their approach. The choice is clearly yours but keep one thing in mind, “Keep it Simple Stupid”. Yes, this cliché also applies to the fundamentals of bowling. Simple bowling games are highly correlated to optimal striking potential. Reason being: If something goes awry in a simple bowling game, it can easily be detected and fixed. Beginner bowlers are encouraged to use the 4-Step Approach but only if it feels more comfortable. The 4-Step footwork approach is illustrated above. Regardless of the number of footsteps used, some form of ball movement starts on the first step. Without question, a 4-Step Approach starts bowl movement on the first step.
Demonstrate Comfortable Footwork Timing

Footwork defined, 4 or 5-Step Approaches:

With a 5-Step Approach, ball movement should still start on the first. However, many bowlers using the 5-Step Approach have developed their own comfortable timing and are often seen starting their ball movement anywhere between steps 1 and 2.5. What is important to know is this:

- The 4-Step Approach footwork starts with the right foot if you are a right-handed bowler and the left foot if you are left-handed.
- The 5-Step Approach footwork starts with the left foot for right-handed bowlers and the right foot for left-handed bowlers.

Regardless of the footwork timing you use, always remember that your last step is a slide-step and you should be sliding with a flat foot, not on your toes or your heels. Additionally, you should slide with the foot opposite of your dominate hand. If you are right-hand dominate, you will slide with your left foot and for left-handed dominate bowlers, slide with your right foot.
Demonstrate Comfortable Footwork Timing

Footwork, length and directions of steps:

Determining the length and direction of your footwork timing can be tricky. There are several ways to do it. Some people take actual steps; some do a combination of short slide-steps to long slide-steps; and others do quick, running-like steps. Do whatever works to achieve a consistent footwork timing.

The key to determining the length and direction of the footsteps is to walk as straight as possible, as shown in the diagram above. The lane approach, where the bowler stands, has two sets of black dots. One set is 12 feet from the foul line and the other is 15 feet from the foul line. And depending on which set of dots you choose to use for your feet will determine the length of your footsteps. While walking straight is optimal, a little drift (2 or 3 boards) is allowed when making your footsteps. The general goal of the fundamentals of bowling is consistency and repeating shots. So, if you drift 2 boards on every shot, you can make adjustments with your feet and targets to overcome that small drift issue.
Demonstrate Comfortable Footwork Timing

Footwork Timing:

Checking Your Understanding:
(answers to questions can be found in the back of the manual)

In your own words, define what is meant by the term footwork?

When developing a 5-step approach, what step do you start moving the ball (select all that applies)?
- First step
- Second step
- Third step
- Fifth step

When developing a 4-step approach, what step do you start moving the ball (select all that applies)?
- First step
- Second step
- Third step
- Fourth step
Demonstrate Comfortable Footwork Timing

Footwork Timing:

Checking Your Understanding: (answers to questions can be found in the back of the manual)

When determining length and direction of footsteps, are drifting boards allowed?
   a) Yes
   b) No

And, if so, how many boards can you drift, in either direction (select all that applies)?
   a) 0
   b) 1 to 2
   c) 2 to 3
   d) 5 or more

The congruency between the arm swing and the footwork is defined as demonstrating comfortable?
   a) Footsteps
   b) Timing
   c) Footworking
   d) Pop locking
Demonstrate an Effective Release

Release area, (flat spot) defined:

Since we have discussed getting equipped to bowl and demonstrating proper armswing and comfortable footwork timing, we can now discuss demonstrating an effective release. But first, let’s define an important term involved in the release process, the release area (flat spot). This area, the flat spot, is where all the release activity happens; it is the powerhouse fundamental of bowling. It is where the bowler uses his/her arm swing to transfer energy to the bowling ball. The objective of the release area (flat spot) is to help smoothly transition the energy generated by gravity and the armswing through the approach. Let’s just say that the release area (flat spot) is an energy conduit and landing pad for the armswing; it is the area between the heel and toe of your slide foot, as shown in the diagram above.
Demonstrate an Effective Release

Release, armswing focus:

The job of the armswing in the release process:
As we discussed earlier in the training, the armswing has a very important job; it uses gravity to generate energy to aid in the release process. This is why the armswing plays such an important role in bringing consistency and strike power to the game of bowling. In the images above, we revisit the armswing at work as it leverages and transfers its energy to the release area (flat spot) and the follow through.
Demonstrate an Effective Release

Release, rotate ball:

Ball Rotations
Build Strike Power

Rotate the ball just before the release area (flat spot):

We have defined the release area (flat spot) as being the sweet spot in the release process but this sweet spot does not mean much if used incorrectly. This is where rotating the bowling ball just as you reach the release area (flat spot) comes into play. Successfully rotating the ball in the release area (flat spot) is how the armswing generates and transfers energy for striking power. Keeping your hand behind the ball, as shown in the images above, until you reach the release area (flat spot) will help you deliver more rotations by executing good thumb timing and projecting a strong follow through.

When rotating the ball, remember to use only your wrist and fingers; never use your arm to create rotations. Your arm should remain behind the ball through the release while rotating the ball slightly by turning your wrist counter clockwise until your thumb is facing one (1) or two (2) o’clock. In no time, you will be rotating with your wrist and pushing with your fingers.
Demonstrate an Effective Release

The Release, thumb timing:

Execute good thumb timing:

While rotating the ball is an integral part of the release process, it can not be effectively done if good thumb timing is absent. Good thumb timing is defined as being the process of having the thumb exit the ball in the release area (flat spot), just after the ball is rotated and before it is release from the finger holes, as shown in the images above. Good thumb timing is the moment the thumb is at its most downward position and exits the thumb hole naturally. It is best executed when the swing is relaxed from front to back, allowing gravity to take over and simply wait for the thumb to exit the ball by itself before accelerating the follow-through. Thumb timing is the most critical part of the release. When the thumb exits the ball before the flat spot it is call early timing and when the thumb exits after the flat spot, it is call late timing. Both early and late timing can result in poor shot quality.
Demonstrate an Effective Release

Release, follow through:

Execute a strong follow through: The last component of the release is the follow through. This is the where the fingers take center stage and, with the assistance of the armswing, the fingers rip through the forward swing plane to generate high powered rotations that aim to strike. I attached three (3) images of strong follow through motions. They all vary a little in style but all three (3) are totally acceptable to duplicate. Up top we have our lady bowler using a face-front follow through. Up top, to the right, the bowler is using an over the shoulder, close to the ear method.

At the bottom, the bowler is using a hand shake with the bowling pins follow through where the armswing is facing the pin deck. No one follow through is better than the other; just choose the one that is comfortable for you.
Demonstrate an Effective Release

The Release:

Checking Your Understanding:
(answers to questions can be found in the back of the manual)

1. In your own words, define what is meant by the term “release point” (flat spot)?

2. What is the significance of using a straight, firm and fluent arm swing in demonstrating an effective release?

3. Rotating the ball just before the release point (flat spot) allows for (select all that applies)?
   a) More ball rotation
   b) Smooth thumb timing
   c) Aligned arm swing
   d) Good footwork

Explain, in your own words, what is meant by the term “thumb timing”?

If the thumb exists the ball too early, before the release point (flat spot), this results in __________ __________?

If the thumb exists the ball too late, after the release point (flat spot), this results in __________ __________?

What are the three (3) acceptable follow through arm positions?
Making Adjustments to Lane Oil Patterns

Adjustments, target aids:

Define Target Aids:
We have tackled the task of getting equipped to bowl and the physical fundamentals needed to execute the perfect strike shot. Now we need to familiarize ourselves with the bowling lane and its oil patterns so that adjustments can be made, if needed, to successfully meet our goal of executing the perfect strike shot.

Shown above is a diagram of a bowling lane and, as you can see, there are lots of strategically placed markings; these markings have purpose. The 10 triangle-shaped dots to the far right symbolize the bowling pins. And circled in red, are the target aids. Target aids are simply that, targets, and bowlers use these aids to visualize imaginary angles down the lane which helps them to be consistent with making strikes and spares. To the left of the target aids is a black line immediately followed by a set of black dots; this line is the foul line. The foul line is the dividing point that separates the lane area from the approach area.
Making Adjustments to Lane Oil Patterns

Adjustments, approach aids:

Define Approach Aids:

I have circled the approach aids on the diagram listed above. Notice, there are three sets of approach aids. The first set of approach aids sit 15ft from the foul line. The second set sits 12ft from the foul line. And, of course, the third set of approach aids sit right at the foul line. The approach aids are targets as well and are used for aligning the stance (the bowler’s feet) on the approach. Together, the target and approach aids are used to keep the armswing aligned while executing a shot. These aids are critical to the shot making process. Without these targets, it would be very difficult for bowlers to make the appropriate adjustments to lane oil patterns.
Making Adjustments to Lane Oil Patterns

Adjustments, using aids to align

Reading lane oil patterns:
In the diagram to the right, the bowler is using the target arrow to align his armswing and deliver his shot. From the diagram, he is using the 10-board to execute his shot. He has drawn his imaginary angle directly to the 10-board (2nd arrow from the right for a right-handed bowler) and determined his footstep to walk straight to his target.

I did not guess this answer and either should you. The second diagram is an excellent illustration and will help you along the way when you have questions about targets on the lane. FYI – there are 39 vertical boards on a bowling lane and the count is no different for right or left-handed bowlers. **Example:** The first dot and arrow alignment represents the five (5) board.
Adjustments with aids

**Do not be afraid to move around the bowling approach**

Notice, this bowler is not looking at the 10-board; she is looking mid-lane, somewhere around the 20-board. Your target and approach aids will change based on the lane oil patterns. Making adjustments can get very tricky and complex, especially at bowling tournaments. Conversely, most league and open-play bowling oil patterns are pretty simple and predictable. As you visit the bowling center, remember this quick tip about making adjustments. Before you throw your shot, be sure to make a mental note about the approach and target boards you are using.
Making Adjustments to Lane Oil Patterns

Adjustments with aids

The images to the left illustrate the right and left-handed bowler’s strike pocket. If your ball rolls anywhere in these strike zones, you have a very good chance of striking.

If you used the 10-board as a target and your ball missed to the right of the strike pocket (for right-handed bowlers) or to the left of the strike pocket (for left-handed bowlers) as shown in the diagrams below, your move (adjustment) will be to the right for right-handed bowlers and to the left for left-handed bowlers.

On your next shot, try adjusting by using the 5-board. If your ball rolls past your strike pocket and lands in the opposite hand’s strike pocket, you over adjusted and need to move a few boards back in the opposite direction.

Again, watch your ball movement and follow it. If the ball rolls right of the strike zone, move right and if it moves left of the strike zone, move left.
Making Adjustments to Lane Oil Patterns

Making Adjustments:

1. Define target aids and state what they are used for?

2. From the diagram shown, locate the target aids and write the number that represents them?

3. Define approach aids and state what they are used for?

4. From the diagram shown, locate the approach aids and write the number that represents them below?

Checking Your Understanding:

(answers to questions can be found in the back of the manual)
5. Explain, in your own words, the correlation/importance of using the target and approach aids to align the arm swing?

6. If a left-handed bowler, in his/her shot attempt, properly demonstrated the key fundamentals needed to execute a perfect strike shot and did not because the ball missed the strike pocket to the right, what adjustment should be made?

7. If a right-handed bowler, in his/her shot attempt, properly demonstrated the key fundamentals needed to execute a perfect strike shot and did not because the ball missed the strike pocket to the right, what adjustment should be made?
Conclusion:
This has concluded the training and bowlers should now be able to demonstrate the key fundaments needed to execute the perfect strike shot:

- Getting equipped to bowl
- Demonstrate proper arm swing
- Define and demonstrate comfortable footwork timing
- Define and demonstrate an effective release
- Make adjustments to lane oil patterns

Now it is time to practice on your fundamentals and enjoy the benefits of striking!!!
Sources:

Getting Equipped to Bowl

Bowling Pro Shop:

1. What are the methods that can be used to locate a pro shop in your area?
   Ask a league bowler, check the yellow pages (hardcopy or virtual), visit Brunswick’s bowling portal

2. What is the most important fundamental to consider when looking to execute the perfect strike shot?
   The fit of the bowling ball

3. As a result of a consultation with a drilling expert, what bowling products are mandatory for a bowler to have in order to bowl?
   Bowling ball, bag and shoes

4. Name four (4) body parts that can be damaged as a result of bowling with an ill-fitted bowling ball?
   Hands, back, wrist, shoulders, knees

5. When getting fitted for a bowling ball, list the five (5) key factors to consider?
   Ball weight; size, pitch and span of holes; and Grip

6. What forms of payment do pro shops typically accept (check all that applies)?
   a) Checks
   b) Visa
   c) Master Card
   d) Cash
Getting Equipped to Bowl

Bowling Center

1. What are the methods that can be used to locate a bowling center in your area?
   Use the local phone book, visit www.yellowpages.com, or visit www.gobowling.com

2. Where are the bowling shoes located in a bowling center?
   At the customer service/front counter

3. Where are the bowling balls located in a bowling center?
   Usually on racks directly behind the bowling lanes

4. Do you need to try on bowling shoe to determine the fit?
   a) Yes
   b) No

5. Upon renting bowling shoes, what must a renter leave at the counter as collateral (select all that may apply)?
   a) One of your shoes
   b) A $10.00 deposit
   c) Your driver’s license
   d) Your state ID
6. To rent bowling shoes, you generally need how much money?
   $10.00
   $6.00
   $5.00
   $2.00

7. Which three (3) fingers do you insert into the ball to determine comfort for fingers?
   Thumb and two middle fingers

8. Swinging the ball backward and forward helps to determine What?
   Proper weight for use

9. When determining the ball fit in a bowling center, what are the two (2) key factors to consider?
   a) Shoulder and knee comfort
   b) Whist and weight comfort
   c) Fingers and weight comfort
   d) Back and arm comfort
Armswing:

1. In your own words, define what is meant by the term arm swing?

Armswing is defined as the bowler’s ability to let gravity do the work, by allowing the arm to swing freely and naturally from the shoulder.

2. Name the three (3) types of arm swing shapes?

Flat, Rounded and Steep

3. The best way to identify a free, fluent armswing is to liken the arm swing to a?

   a) Clock
   b) A underhand pitch
   c) A pendulum
   d) Spiraled football

What is the source of the armswing’s energy?

Gravity

Demonstrating a proper arm swing is the most important fundament for creating accuracy in a bowler’s game?

   a) Yes
   b) No
Demonstrate Comfortable Footwork Timing

Footwork Timing:

When determining length and direction of footsteps, is drifting boards allowed?
  a) Yes
  b) No

And, if so, how many boards can you drift, in either direction (select all that applies)?
  a) 0
  b) 1 to 2
  c) 2 to 3
  d) 5 or more

The congruency between the arm swing and the footwork is defined as demonstrating comfortable?
  a) Footsteps
  b) Timing
  c) Footworking
  d) Pop locking
Demonstrate Comfortable Footwork Timing

**Footwork Timing:**

In your own words, define what is meant by the term footwork?

Footwork is the footstep process (steps taken) a bowler uses to reach the bowling foul line?

When developing a 5-step approach, what step do you start moving the ball (select all that applies)?

- First step
- Second step
- Third step
- Fifth step

When developing a 4-step approach, what step do you start moving the ball (select all that applies)?

- First step
- Second step
- Third step
- Fourth step
Demonstrate an Effective Release

The Release:

1. In your own words, define what is meant by the term “release point” (flat spot)?

   It is the area between the heel and toe of the bowler’s slide foot, optimal area for releasing the bowling.

2. What is the significance of using a straight, firm and fluent arm swing in demonstrating an effective release?

   A straight, firm and fluent arm swing will keep the ball align during the release and will help transport energy from the arm swing to the ball for more striking power.

3. Rotating the ball just before the release point (flat spot) allows for (select all that applies)?

   a) More ball rotation
   b) Smooth thumb timing
   c) Aligned arm swing
   d) Good footwork

   Explain, in your own words, what is meant by the term “thumb timing”?

   It is the process of your thumb exiting the ball while the ball is in the flat spot.

   If the thumb exists the ball too early, before the release point (flat spot), this results in early timing.

   If the thumb exists the ball too late, after the release point (flat spot), this results in late timing.

   What are the three (3) acceptable follow through arm positions?

   Over the shoulder of the dominate hand, straight out toward the pins, and straight up towards the face.

Answer Key
1. Define target aids and state what they are used for?
   They are lane targets used to align the armswing.

2. From the diagram shown, locate the target aids and write the number that represents them?
   4 and 5

3. Define approach aids and state what they are used for?
   They are approach targets and used to align your feet.

4. From the diagram shown, locate the approach aids and write the number that represents them below?
   1, 2 and 3
Making Adjustments: Oil Patterns

5. Explain, in your own words, the correlation/importance of using the target and approach aids to align the arm swing?

The approach and target aids are perfectly aligned with one another and allows the bowler to draw an imaginary line/angle (using the armswing and aids) to the bowling pins.

6. If a left-handed bowler, in his/her shot attempt, properly demonstrated the key fundamentals needed to execute a perfect strike shot and did not because the ball missed the strike pocket to the right, what adjustment should be made?

The bowler should move his/her approach and target aids to the right so that the ball can roll into the strike pocket.

7. If a right-handed bowler, in his/her shot attempt, properly demonstrated the key fundamentals needed to execute a perfect strike shot and did not because the ball missed the strike pocket to the right, what adjustment should be made?

The right-handed bowler should move his/her approach and target aids to the right so that the ball can roll into the strike pocket.