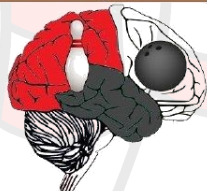


STRIKING MASTERMIND



BOWLology

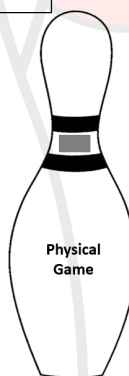
Bowlology Spare-Strike Pillars



Lane Play



Knowledge
of the
Sport



Physical
Game



Ball
Dynamics

King Pin



Associate

Ten Pin Staffers

**By Josh Hyde Dean of Bowlology Academy
Bowlologist B.L.P. USBC Silver Coach**



Intro to Bowlology Academy

In 2021 the Bowlology Academy was formed into courses that a bowler wants to obtain in their bowling career. Bowlology Academy offers a wide variety of classes such as Bowlology 200 and PBA800. There are five courses taught in the Bowlology Academy from a beginner bowler to a professional bowler. Bowlology Academy also offers a one-day clinic. This clinic is the Spare Strike Pillar. Where Bowlers, Pro-Shop Operators and Coaches learn the four key elements of bowling. This clinic is a credited class for the Bowlology Academy.

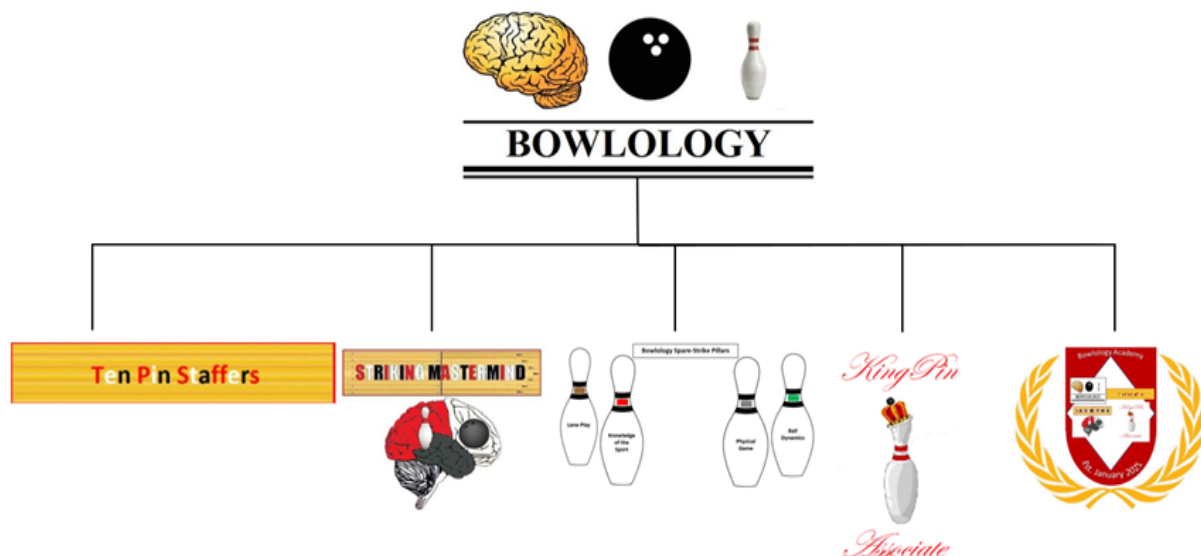
- **Bowlology 200** - which is the basics of the bowling. This includes the history of bowling from 5000 years ago to today, how to make spares, the rules of score keeping, and the method of the perfect strike.
- **Ten Pin Staffer 700**— the course is mainly for pro-shop operators and coaches. This introduces bowling ball construction and how to setup a ball for a bowler.
- **Striking Mastermind 750** - is for the tournament bowler that may need more help learning how to adjust on the lanes or when to switch balls. This continues with a deep dive into bowling ball physics, how to develop an arsenal and how to read the lanes.
- **The PBA 800**— the course is for the bowlers who have tried at least one PBA Regional. In this course, we review the scoring system of the PBA, Lane Courtesy, Player Services, Requirements for joining the PBA and PBA lanes maintenance program.
- Lastly, but certainly not least, is the **KingPin 900 course**. This course is designed to get people to think critically about the sport and share the knowledge with other bowlers.

Mission Statement:

To expand Bowling Knowledge for Bowlers, Coaches, Pro-Shop Operators in innovative way

Vision Statement:

To impart knowledge to the beginner, intermediate, and advanced bowlers about the sport of bowling through the Bowlology Academy Programs: Bowlology 200, Ten Pin Staffers 700, Striking Mastermind 750, PBA 800, and KingPin Associate 900 and Spare Strike Pillar Clinic



1022 Pike Shore Drive, Warsaw, IN 46580

Josh Hyde Bowlologist, B.L.P.

Dean of Bowlology Academy

Knowledge Requirements of a Bowlologist

From covering Tom Smallwood at the 2009 PBA World Championship to the passing of legendary Mark Roth to the latest bowling ball, I cover it all as a Bowlologist should when it comes to the sport of bowling. Items included are how to bowl, running a tournament or league, knowing the history of the sport, the latest equipment announcements, the ins, and outs of tournament analysis, how to score a game and coaching from a beginner to an advanced bowler. A Bowlologist also understands the physical game on the lane, the must knows of the rules of the game, and being an ambassador to the sport. A Bowlologist would also know how to run a pro-shop and know the fundamentals of ball design. Knowing the distance of the patterns and knowing how many milliliters of oil is on the lane are other points a Bowlologist would know.

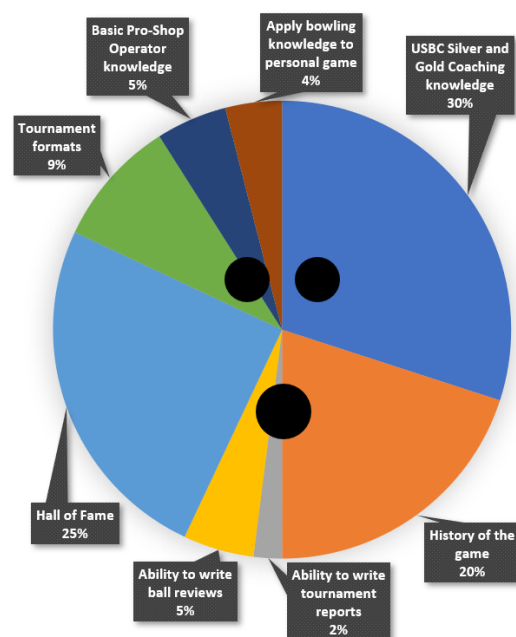
In December of 2021, I did a bowling pin study on how many degrees a pin must fall in a successful single pin spare. If any bowlers have a thought-provoking question, Bowlologists should be able to provide information and data based on analysis.

These are knowledge requirements that are essential for a Bowlologist.

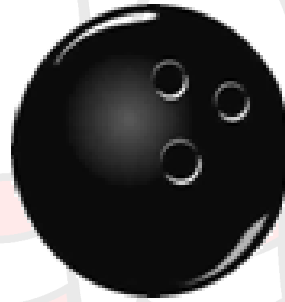
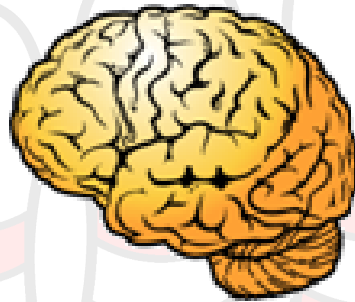
Bowlologist Job Description

This is a breakdown of a Bowlologist's tasks and responsibilities

- USBC Silver and Gold Coaching knowledge
 - *Knowledge of the sport*
 - *Physical game*
 - *Lane play*
 - *Ball dynamics*
- History of the game
- Ability to write tournament reports
- Ability to write ball reviews
- Hall of Fame
- Tournament formats
- Basic Pro-Shop Operator knowledge
- Apply bowling knowledge to personal game



Attending tournaments and associating with the bowling management is another factor in being a successful Bowlologist. This helps the Bowlologist contribute to the sport of bowling and interact with bowling center proprietors and pro-shop operators. Another good resource is the local USBC Association where a volunteer can be an asset to the local sport. Most cities host tournaments where help is needed for setting up brackets, managing side pots, organizing lanes, or promoting the tournament. Getting involved in local bowling events is the first step towards a bigger industry job.



BOWLOLOGY

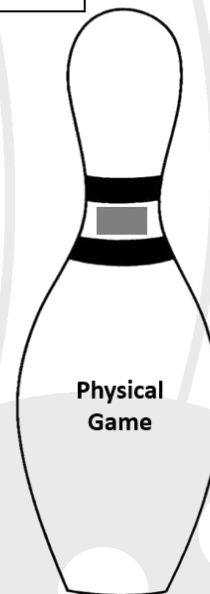
Bowlology Spare-Strike Pillars



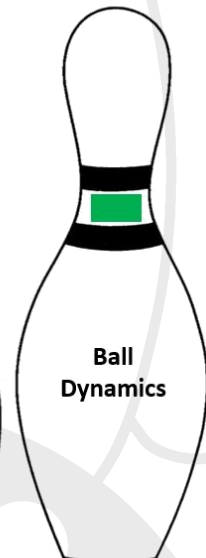
Lane Play



Knowledge
of the
Sport



Physical
Game



Ball
Dynamics

Bowlology Presents:
Bowlology Academy Overview, Fact Sheets & Exams
This program will enable bowlers, coaches,
pro-shop operators to identify bowling knowledge

By Bowlologist Josh Hyde B.L.P
USBC Silver Coach



Knowledge of the Sport

This may sound elementary; however bowlers do not know what they think they know. Some do not even now how to keep score, some do not even know what pins they even left. When they leave a spare. The knowledge of the sport is the foundation to have a great mind in bowling. If a person does not even know what pins they left when they shot a 299, this shows they are not even on an amateur level. The knowledge of the sport is the foundation in helping bowlers to improve in their game. Keeping score in bowling was one of the biggest challenge to learn. As I got better, I thought as if I could absorb bowling knowledge like a sponge. To be a pro-bowler pros know what they need to do when they win a game for a title or to advance to the

Physical Game

One-fifth of the lanes is the approach this is where the bowler has to put their position to execute properly so they can win a pot game or a small tournament at their bowling center. The text-book style is a good place to start but as a bowler wants to advance their game. They need to work on fundamentals and one advanced move that they can think can do. Timing in a text-book is moving the ball and the feet at the same time. For a pro-bowler this may not be the case. They are more advanced at the game than what the average Joe Bowler is doing with bowling three games a week and a sweeper here and there. Some fundamentals that bowlers see from the pros in their game are textbook like while others are what an experienced and talented pro would do. Coaches would not want their students to emulate what the pros are doing right off the bat as a student needs to learn the basics and how they react on the lanes. The textbook style with a four-step approach would be 1,1,2,2,3,3,4,4. This is an easy way to teach the first-time bowler as the coaches get more advanced. They need to work with what the bowler has and try to help them critique their style of play.

Lane Play

Bowling is a surface sport. Bowlers are going to have to adjust in their league or tournament play. There are all kinds of adjustments, such as hand position changes, that a bowler can make during lane transition. If they expect the lane to remain the same during a game in league or tournament play, they are sadly mistaken. If bowlers know how to play lanes throughout the course of the block, they might have a leg up on the field in tournament play or league. However, if they do not know how to adjust on the lane, they will be at a disadvantage. Smart lane play helps a bowler know what to do when he/she runs into a difficult situation.

Ball Dynamics

In ball dynamics there are a number of layouts that a pro-shop operator can use. In the past bowlers have been told that a pin-down ball will read the lanes earlier. A pin-up will read the lanes later. This is true however bowlers need to rethink as a pin up or pin-down as the delaying or making the breakpoint sooner. Bowlers need to keep in mind that the surface of the ball is more important as to the layout of the ball. There are three types of bowlers the spinner, three quarters and the full roller. Pro-shop operators need to know the bowler's positive axis point to be able to suggest a ball that a bowler could buy. If a bowler has a pin-up ball but is sanded to 1500 the ball is going to read earlier. Vice versa if a bowler has a pin down ball but is polished the ball is going to react later. Since it is polished both balls will still read earlier or later depending the bowlers PAP. In developing an arsenal this is important to know. How many asymmetrical and symmetrical does the bowler want to have.

Spare Strike Pillars

A bowler who applies these four pillars during a tournament or a league will have success. Knowledge of the sport is the foundation of the sport itself. The physical game is also important because the bowler has twenty percent of the lane in which he or she will execute every frame. Lane play is a factor because if the bowler can read their ball on the lane, they will know what adjustments are needed. Ball dynamics are essential to the bowler. The bowler and the pro-shop operator must be on the same page. This will give the bowler a leg up on their competition. These four pillars properly followed can maximize a bowler's game. Bowlers, coaches, and pro-shop operators should have a high degree of understanding of these pillars to be successful on and off the lane.

Greatest Minds of Bowling

These individuals have studied the game with great detail. This cannot be stressed enough. The Bowlology spare strike pillars are the essentials of the game to become one of the greatest minds of bowling. All of these individuals know these four key areas of the sport. Some of these leaders have contributed to the USBC coaching manuals for the Bronze, Silver and Gold certifications. The second bowler that completed the Triple Crown was Johnny Petraglia. Parker Bohn III has made the statement about Johnny being the smartest person in bowling. Brunswick named a ball after him. Glenn Allison said that Bill Taylor was the smartest person in bowling. These individuals have studied the sport and have made bowlers bowl better. David Ozio talked with Bill Taylor one day. The next day, Ozio went to the bowling center and thought about what he and Bill had discussed. He sat down at the settee area and he came to the realization with what Bill had said totally made perfect sense. Bill Taylor was not a big fan of the new bowling ball technology. However, during the late 70s, he wrote a book entitled **Balance**. The book described how bowlers could drill balls like they do today. He also explained ball reaction in this book. Taylor also came up with the idea of the oil-less lane.

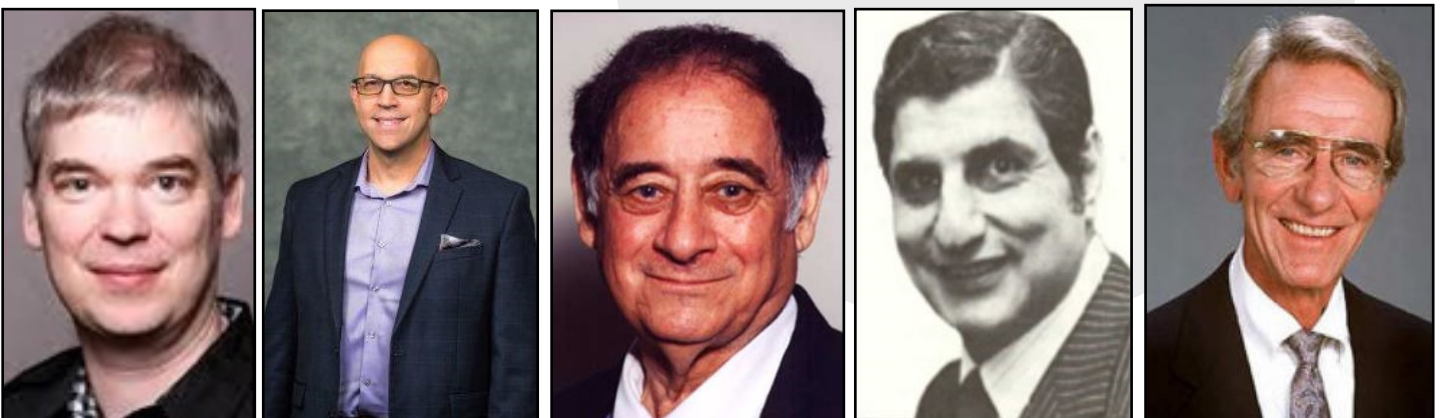
Bowling Innovations

Back in the 1800s, bowlers yearned for more hook out of their ball. Balls were made out of wood back then. To get more hook, they would actually cut the ball in half and put a block of wood (referred to as the "DoDo") in the ball. These balls would hook more resulting in bowlers shooting higher scores. They would invent a dodo scale to find the counterfeit balls that bowlers tried to sneak in. In 1903, they would outlaw the DoDo ball. In 1973, Don McCune would soak his ball in MEK. This would make the ball hook more on the lane. He would win six PBA Tour Titles to become the Player of the Year. McCune revolutionized the game of bowling. Mark Roth and Marshall Holman created the modern power game. Roth & Holman were the first ones to hook the entire lane with the Columbia 300 Yellow Dot. Roth would go straight and hard at the spares. It was a different game back in the 70s. It is getting to be less of a challenge for a bowler to struggle. Bowlers still have to make a delivery on the lane. The ball is not striking on its own. Bowlers today want to drill up the same layout that Jason Belmonte used at the 2020 U.S. Open. This layout may not work out for Joe Bowler because he does not throw the ball like Belmonte. It is important that pro-shop operators & coaches work together to help the Joe Bowlers understand what is needed to attack the lane in order to win a Mega buck scratch tournament or to cash in a PBA Regional Tournament. Joe Bowler may have the same ball that Belmonte used to win his first U.S. Open title; however, it may not be drilled the same way. The coach and the pro-shop operator need to stress to Joe Bowler that he does not need the same layout as Belmonte. Jason Belmonte has revolutionized the sport of bowling, most notably the two-handed ball release. Winning 13 majors on the PBA Tour and becoming the second player to complete the Super Slam is an amazing feat in and of itself. All of these are examples of bowling innovations that applied throughout the history of the sport. Bowlers always want to strike as much as they possibly can. The U.S. Open is the ultimate test of a bowler's skill. In 1958, Eddie Elias founded the PBA which enabled bowlers to make a living by throwing a bowling ball.

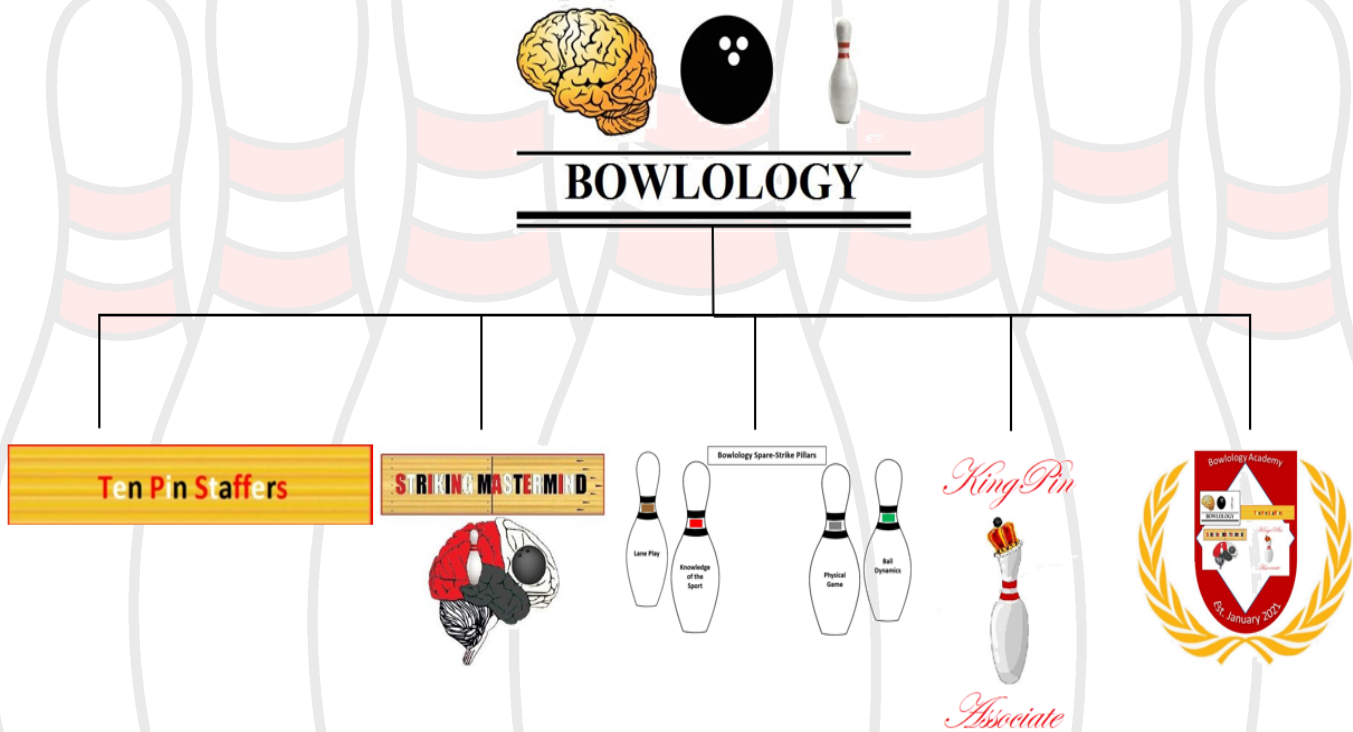
PBA Pinnacle of Bowling

The Pinnacle of Bowling is the PBA. Earl Anthony, Dick Weber, Don Carter, Walter Ray Williams, Jr., Pete Weber, Jason Belmonte, and EJ Tackett are the elite group of the greatest players in the history of the PBA. Along with many others the PBA has five majors tournaments. These tournaments are as follows. The PBA World Championship the U.S. Open, the Tournament of Champions, The USBC Masters, and the PBA Players Championship, Norm Duke, Johnny Petraglia, Billy Hardwick, Chris Barnes, Pete Weber, Mike Aulby are the only players to complete the Triple Crown. In 2013 Pete Weber became the first bowler to complete the Triple Crown twice when he won the Tournament of Champions. These five majors are difficult to score on because of the challenging lane conditions that have less margin of error than a normal PBA tournament. In 2008 the PBA celebrated 50 years of the PBA. Earl Anthony was voted the greatest bowler in the history of the PBA. Ten years later for the 60th anniversary the PBA would come up with 60 greatest moments in PBA History. Don Johnson would have the all-time greatest moments in the 1970 Tournament of Champions by shooting a 299 in the championship game. In 1975 the PBA would have the inaugural PBA Hall of Fame. Dick Weber, Don Carter, and Carmen Salvino would be the first PBA Hall of Famers to get inducted into the hall of fame.

Chris Schenkel, Eddie Elias, and Dick Weber were the forefathers at the PBA founding.



Bowlology Organizational Chart



Bowlology was established in 2011 as a column in the Josh Hyde Bowling Newsletter. The first topic was on the perfect strike. The founder of Bowlology, Josh Hyde, wanted to share his knowledge about the sport of bowling. This organizational chart is made up of coaches, bowlers, and pro shop operators that love the sport of bowling. In each area, Bowlology is striving to teach bowlers more about the sport they compete in. Josh Hyde noticed that few bowlers were aware of the fundamentals of the sport. The Ten Pin Staffers and pro-shop operators know the dynamics of the bowling ball and the physical game. Striking Mastermind is for bowlers who compete at tournaments. Ten Pin Staffers, Striking Mastermind and the Spare Strike Pillars are all under the Bowlology umbrella. Authors and/or coaches like Mike Shady, Kim Terrell-Kearney, Fred Borden, Mark Baker, Del Ballard, Jr. and Mo Pinel have been highly influential in bowling instruction. For those people that are interested, they can email Josh Hyde at joshhydeb bowling@gmail.com for more information.

Bowlology Fact Sheet

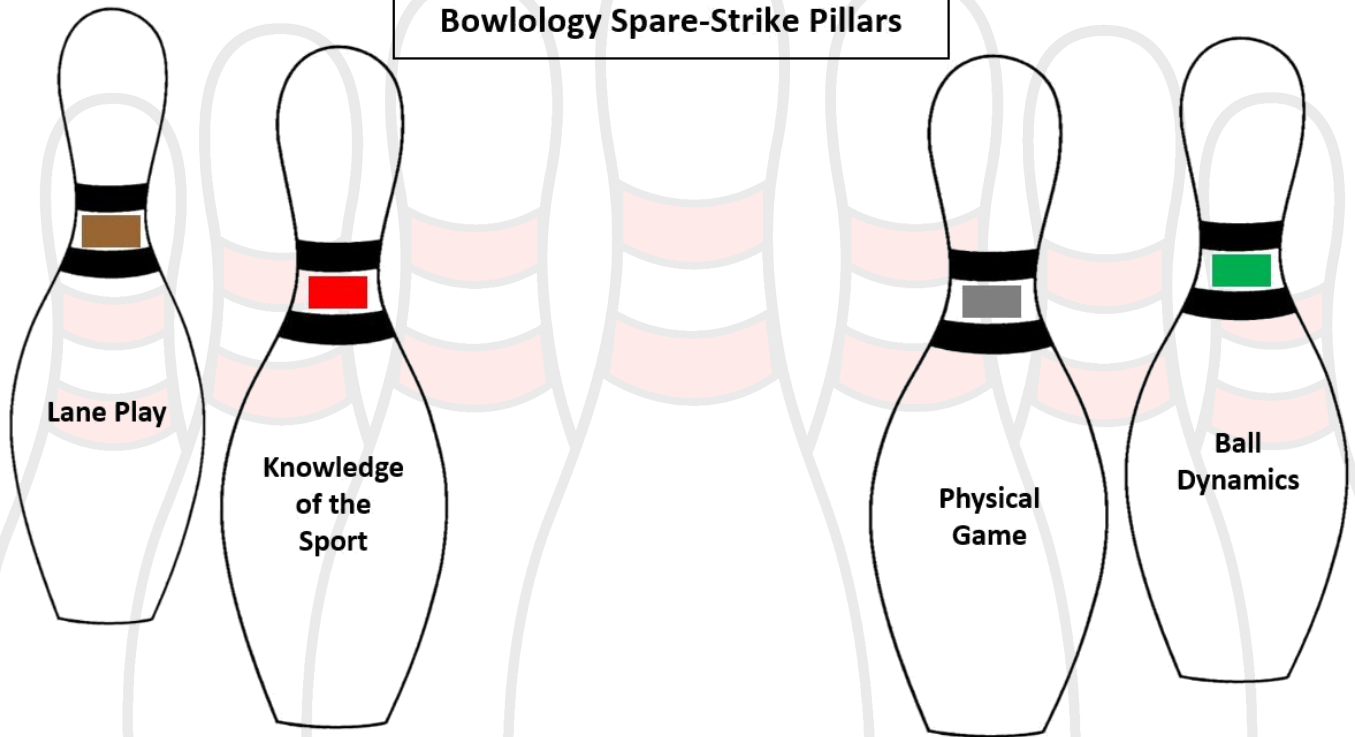


1895 The ABC was founded currently known as the USBC.
1913 Bowler's Journal was founded.
1913 the Dodo Ball was outlawed.
1916, the WIBC was founded
1932 Bowling was an exhibition sport in the Olympics.
1932 the BPAA was founded by a few bowling proprietors.
1936 the first mechanical pin setter was invented by AMF.
1941 The ABC currently known as the USBC founded the ABC Hall of Fame.
1941 John Crimmons won the first BPAA All-Star tournament now known as the US Open
1951 Lee Jouglaard would win the first Master's Tournament.
1957 Dick Hoover became the first player to win successfully defend his Masters Title.
1958 Eddie Elias founded the PBA.
1958 the Budweiser Team shot a team record of 3858 the team was consisted of Ray Bluth, Don Carter, Dick Weber, Tom Hennessey, and Pat Patterson
1959 Lou Campi won the first PBA Tournament.
1962 ABC broadcasted their first PBA telecast.
1964 Don Carter became the first bowler & athlete to sign a seven-figure deal with Ebonite.
1966- 1970 Don Johnson made the Championship Round at the Tournament of Champions.
1967 Jack Biondolillo rolled the first televised 300 at the Tournament of Champions.
1969 at the BPAA All-Star currently known as the US Open Billy Hardwick became the first player to complete the Triple Crown.
1969 the PBA created the Regional Program giving high level amateur bowlers the chance at professional level competition of the PBA.
1970 Don Johnson had a 299 game to win the Tournament of Champions
1973 Don McCune won six titles by soaking his ball in MEK.
1973 Jim Godman became the first player to win multiple Tournament of Champions.
1976 Marshall Holman became the youngest bowler to win the Tournament of Champions.
1978 Mark Roth won eight titles on the PBA Tour.
1979 George Pappas led the Tournament of Champions wire to wire.
1979 Nelson Burton Jr wins the Doubles and All Events in the USBC Open Championship.
1980 Mark Roth made a 7-10 split on national television.
1981 the PBA50 Tour was founded these bowlers could not the bowl on the regular PBA Tour in their earlier years. It allowed those guys to compete with Dick Weber, Carmen Salvino, and Harry Smith
1982 Glenn Allison shot 900.
1983 Earl Anthony became the first millionaire at the PBA National Championship.
1983 Norm Duke became the youngest player to win a PBA Title.
1984 Mike Durbin became the first bowler to win three Tournaments of Champions.
1984 The Bowling Hall of Fame was opened.
1987 Pete Weber became the fastest bowler to win ten titles at the Tournament of Champions.
1988 Bob Benoit was the first bowler to bowl a perfect game in the Championship Match.
1990 At the Fall Classic in Milwaukee, Wisconsin the United States Bowling Congress finally sanctioned PBA Tournaments.
1991 Del Ballard, Jr rolled a gutter ball on the final ball to lose the title to Pete Weber at the Fair Lanes Open.
1992 Dick Weber became the first player to win titles in five different decades.
1993 Wichita Open Mike Aulby and David Ozio would set the highest scoring match on National Television.
1993 George Branham III became the first African American to win a major at the Tournament of Champions.
1993 Phil Ware would win the first ABC Senior Masters
1994 PBA National Championship Johnny Petraglia would earn \$100,000 on National Television.
1995 ABC currently known as USBC celebrated their 100th anniversary.
1995 John Handegard became the oldest bowler to win a PBA Tour Title.
1995 Mike Aulby would become the fourth player to complete the Triple Crown and Grand Slam.
1995 The National Bowling Stadium opened.
1996 After a hiatus both the Men's & Women's U.S Open were conducted simultaneously
1996 Bob Learn, Jr shot a four-game record of 1129 averaging 282.25 for his four games.
1996 Dave Husted became the first bowler to successfully defend the U.S. Open.
1996 Mike Aulby became the first bowler all five majors at the Bayer-Brunswick Touring Players Championship.
1996 The Top Five averaged 276.37 in the Flagship Open.
1997 Amleto Monacelli became the first international bowler to enter the PBA Hall of Fame.

Bowlology Fact Sheet—Cont'd

1997 Jeremy Sonnenfeld rolled the first sanctioned 900.
1997 Walter Ray Williams, Jr would become the first bowler to earn two million dollars in career earnings.
1998 Mike Aulby would become the first bowler to win the USBC Masters three times.
1998 PBA Founder Eddie Elias passed away.
1999 Eric Forkel would win the very first outdoor tournament in Bryant Park.
2000 Chris Peters a former Microsoft Executive purchased the PBA.
90's to the 2000's Walter Ray Williams, Jr was voted the bowler of the decade for two straight decades.
2000 Jason Couch became the first player to defend his TOC title at the Brunswick World Tournament of Champions.
2000-2001 Jeff Carter set the all-time high average for one season of 261.7.
2001 Carolyn Dorin-Ballard won a record seven titles on the PWBA Tour.
2001 Joe Norris & Earl Anthony passed away.
2002 Jason Couch became the first player in PBA History to win three TOC in a row.
2002-2003 Walter Ray Williams, Jr won two majors while earning \$300,000 on the PBA Tour.
2003 The PWBA had to shut down due to financial hardship.
2004 the USBC Open Championship turned 100 years old.
2004 Danny Wisemen shot 289 at the USBC Masters in Milwaukee Brewers Stadium.
2005 the Bowling World lost two icons Dick Weber & Chris Schenkel
2006 at the PBA World Championship Walter Ray Williams Jr tied Earl Anthony with 41 titles beating Pete Weber.
2008 Earl Anthony was voted the greatest player in PBA History.
2008 Norm Duke also won the three majors in a single year because it was not in the same season. It did not count as three majors in a single season.
2008 the PBA recognized the USBC Masters and the BPAA All-Star as PBA Titles.
2009 Jason Belmonte became the first bowler to win with two hands.
2009 PBA introduced the World Series Of Bowling Tournament in Allen Park, Michigan.
2009 Tom Smallwood went from unemployment to PBA World Champion.
2009-2010 Walter Ray Williams, Jr would become the first bowler to earn PBA Player of the Year in three different decades.
2010 Kelly Kulick became the first woman to win a major at the Tournament of Champions.
2011 The Tournament of Champions had a one-million-dollar purse with \$250,000 going to the winner.
2011 In the Semi-Finals of the Tournament of Champions Mika Koivieumi & Tom Daugherty would set most margins by 299 to 100.
2011 Sean Rash made all the Animal pattern Championships at the World Series of Bowling
2012 Johnny Petraglia became the first PBA Player to win titles in six different decades.
2012 Pete Weber won his fifth US Open.
2013 Pete Weber became the only player to complete the Triple Crown at the Tournament of Champions
2015 Jason Belmonte became the first bowler to three-peat the USBC Masters.
2015 Jason Belmonte became the second bowler defend his Tournament of Champions Title.
2015 Sean Rash became the first bowler to roll two perfect games on National Television at the Tournament of Champions.
2016 Anthony Simonson became the youngest player on the PBA Tour to win at the USBC Masters.
2016 Francois Lavoie became the first player to bowl a 300 in the championship round at the U.S. Open.
2016 Jesper Svensson became the youngest bowler to win Tournament of Champions.
2017 Walter Ray Williams Jr would win his 100 PBA Title in a PBA Regional.
2017 Jason Belmonte became the first player to win three majors in a single season on the PBA Tour.
2017 Liz Johnson became the second women to win a PBA Title at the World Series of Bowling.
2017 Jason Belmonte became the first player to win four USBC Masters Titles.
2019 USBC Women's Open Championship it turned 100 years old.
2019 Brunswick merged with Ebonite, they now own Columbia 300, Track, Hammer, and PowerHouse along with Ultimate & Radical & DV8 Products.
2020 In the month of August the USBC outlawed weight holes.
2020 Jason Belmonte would join Mike Aulby as the only two players all five majors by winning the U.S. Open.
**Tommy Jones, Chris Barnes, Mike Aulby, Jason Belmonte and EJ Tackett are the only five players to earn Player of the Year & Rookie of the Year Honors.

Bowlology Spare-Strike Pillars



When Bowlology was founded in November of 2011, the Josh Hyde's Bowling Newsletter wanted to give bowlers some knowledge of the sport. These spare- strike pillars are essential to Bowlology in that they are the four pillars that a Bowlologist will need in order to help bowlers, coaches and pro-shop operators.

--The First Pillar is Knowledge of the Sport which involves split making, makeable splits, lane courtesy, the perfect strike, score-keeping, playing field, pin knowledge, pin carry, and general bowling knowledge.

--The Second Pillar is the Physical Game. If a bowler does not have a solid foundation, he or she is not going to be able to execute in every frame. Timing puts away the trail leg, the finish position and the arm swing. These are the main attributes of a bowler's physical game.

--The Third Pillar is Lane Play which is how the bowler plays the lanes making hand position and speed adjustments. In most sports, the athletes are not going to have to worry about the surface of the field. However, in bowling, bowlers do have to know what the lanes are doing in order to be a contender in a league match. The same holds true when Jason Belmonte needs a strike to win the U.S Open. Lane play is a big portion of a bowler's game.

--The Final Pillar is Ball Dynamics. This is where the bowler and the pro-shop operator need to be on the same page. Each bowler is different. If a pro bowler wins a Major and Joe Bowler wants to use the same ball with the same layout and surface, more than likely Joe Bowler will not have the same results as the pro bowler due to differences in their game. They may use the same ball except with a different layout and surface. This is why it is so important for the pro-shop operator to know Joe Bowler's game. Pro-shop operators generally know the dynamics of the bowling ball. Ideally, the bowler needs to find a pro-shop operator that has some coaching experience. If he/she has a pro-shop operator and a coach, all three need to come up with a game plan so that the bowler can be successful on the lanes.

These four Bowlology Spare-Strike Pillars will enable bowlers, coaches and pro-shop operators to identify bowling knowledge.

Bowlologist Problem-Solving Chart

<u>Open</u>	<u>Spare</u>	<u>Strike</u>
Bowler falls off balance at the foul line	Physical Game	Frame 2
Bowler cannot identify his PAP	Ball Dynamics	Frame 3
Bowler is muscling the ball	Physical Game	Frame 2
Bowler is not choosing the right ball	Lane Play and/or Ball Dynamics	Frames 3 thru 5
Bowler misses spares	Knowledge of the Sport	Frame 1
Bowler is not using the correct surface on the ball	Ball Dynamics	Frame 3 & 5
Bowler is not reading the lanes right	Lane Play	Frame 4
Bowler is using the wrong layout	Ball Dynamics	Frame 3
Bowler is playing in the wrong area on the lane	Lane Play	Frame 4
Bowler is leaving the ten pin and is unable to string strikes	Lane Play	Frame 4
Bowler fails to acknowledge bowlers on adjacent lanes	Knowledge of the Sport	Frame 1
Bowler stands in the same spot every frame and does not adjust	Lane Play	Frame 4
Bowler bowls well on specific pattern but has trouble bowling on other patterns	Lane Play	Frame 4
Bowler misses double wood spares	Knowledge of the Sport	Frame 1

This chart is for Bowlologists to use as a reference to help other bowlers.

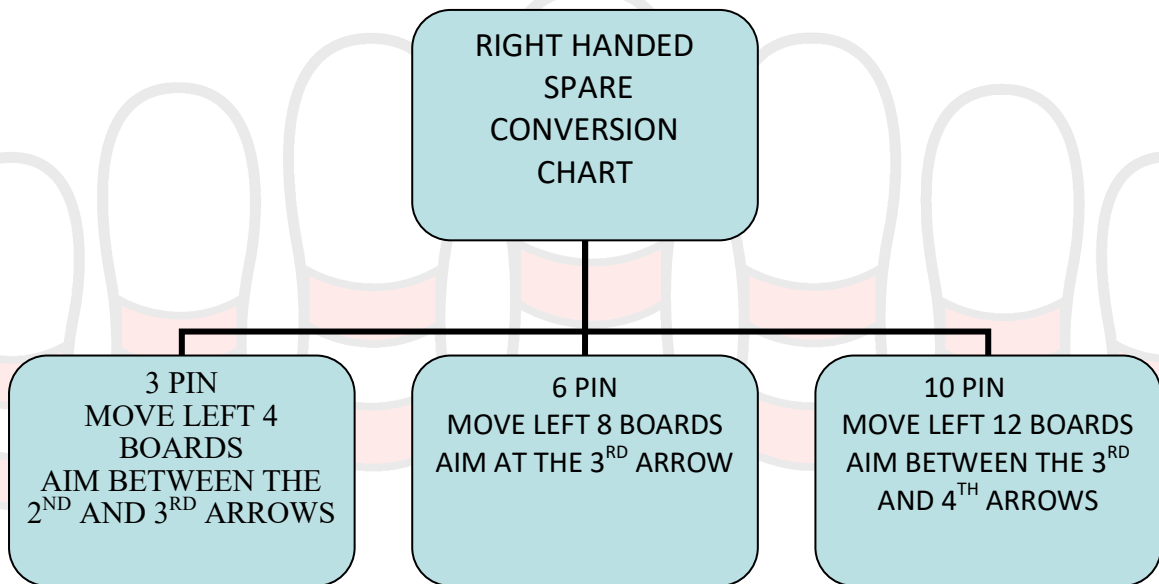
The "Open" represents the problem.

The "Spare" represents the four key areas - Knowledge of the Sport, Physical Game, Ball Dynamics and Lane Play.

The "Strike" refers to the specific frame(s) in the Bowlology book.

Bowlers must practice in order to advance their game to the next level. The chart above is of course not a substitute for practicing on the lanes. Bowlers must have always practice to improve their game and maintain their skills. Also remember going hard and straight at spares is the ideal way to convert spares and it will alleviate the pattern of whiffing the spare. Bowlers do not want to do this especially opening up with a double. If a bowler goes double ten pin and makes the spare his/her maximum score is 279. However if they miss the spare. Then they can only max out at a 267 making that spare can add 12 pins at the end of the game.

*****PRACTICE*****
Shooting Spares & Strikes



REMEMBER- BOWLERS NEED TO OPEN THEIR BODY SLIGHTY TO THE TARGET.

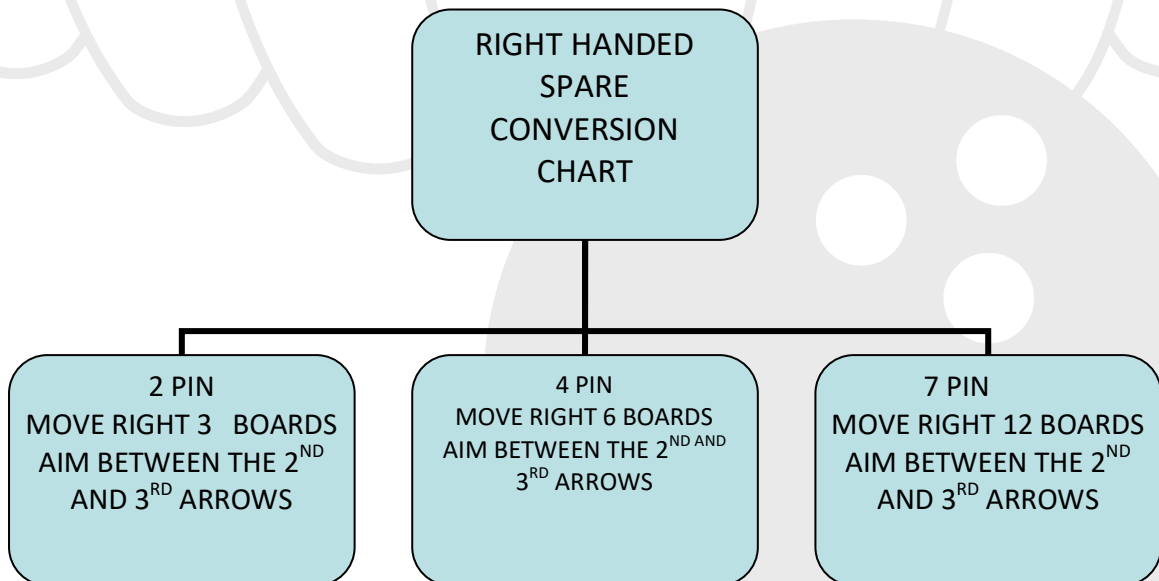
HEADPIN & 5 PIN SPARES

IF A BOWLER LEAVES THE HEADPIN- NO ADJUSTMENT IS NEEDED- THEY CAN USE THEIR STRIKE SHOT.

IF A BOWLER LEAVES THE 5 PIN- NO ADJUSTMENT IS NEEDED- THEY CAN USE THEIR STRIKE SHOT.

STRAIGHTER IS GREATER- GOING HARD AND STRAIGHT AT SPARES HAS A HIGHER PERCENTAGE RATE THAN HOOKING AT SPARES.

EQUIPMENT NEEDED- PLASTIC BALL- PLASTIC BALLS TEND TO GO MUCH STRAIGHTER THAN THE HIGH-TECH BALLS OF TODAY.



REMEMBER- BOWLERS NEED TO OPEN THEIR BODY SLIGHTY TO THE TARGET.



LEFT HANDED SPARE CONVERSION CHART

2 PIN
MOVE RIGHT 4 BOARDS
AIM BETWEEN THE 2ND
AND 3RD ARROWS

4 PIN
MOVE RIGHT 8 BOARDS
AIM AT THE 3RD ARROW

7 PIN
MOVE RIGHT 12 BOARDS
AIM BETWEEN THE 3RD
AND 4TH ARROWS

REMEMBER- BOWLERS NEED TO CLOSE THEIR BODY SLIGHTLY TO THE TARGET.

HEADPIN & 5 PIN SPARES

IF A BOWLER LEAVES THE HEADPIN- NO ADJUSTMENT IS NEEDED- THEY CAN USE THEIR STRIKE SHOT.

IF A BOWLER LEAVES THE 5 PIN- NO ADJUSTMENT IS NEEDED- THEY CAN USE THEIR STRIKE SHOT.

STRAIGHTER IS GREATER- GOING HARD AND STRAIGHT AT SPARES HAS A HIGHER PERCENTAGE RATE THAN HOOKING AT SPARES.

EQUIPMENT NEEDED- PLASTIC BALL- PLASTIC BALLS TEND TO GO MUCH STRAIGHTER THAN THE HIGH-TECH BALLS OF TODAY.

LEFT HANDED SPARE CONVERSION CHART

3 PIN
MOVE LEFT 3 BOARDS
AIM BETWEEN THE 2ND
AND 3RD ARROWS

6 PIN
MOVE LEFT 6 BOARDS
AIM BETWEEN THE 2ND
AND 3RD ARROWS

10 PIN
MOVE LEFT 12 BOARDS
AIM BETWEEN THE 2ND
AND 3RD ARROWS

REMEMBER- BOWLERS NEED TO OPEN THEIR BODY SLIGHTLY TO THE TARGET.

21 MULTIPLE COMMON/MAKEABLE SPARES

Left Hand		
Spare	Move	Target
3-5-6	3 Boards Left	Aim between the 2nd and 3rd arrow
1-3-9	5 Boards Left	Aim between the 2nd and 3rd arrow
3-6-9	3 Boards Left	Aim between the 2nd and 3rd arrow
6-9-10	5 Boards Left	Aim between the 2nd and 3rd arrow
2-4-8	6 Boards Right	Aim between the 2nd and 3rd arrow
2-4-7	6 Boards Right	Aim between the 2nd and 3rd arrow
4-7-8	8 Boards Right	Aim between the 2nd and 3rd arrow
1-5	Strike Shot	Aim between the 2nd and 3rd arrow
3-6	5 Boards Left	Aim between the 2nd and 3rd arrow
3-9	3 Boards Left	Aim between the 2nd and 3rd arrow
2-4	3 Boards Right	Aim between the 2nd and 3rd arrow
6-10	8 Boards Left	Aim between the 2nd and 3rd arrow
6-9	6 Boards Left	Aim between the 2nd and 3rd arrow
5-9	1 Board Left	Aim between the 2nd and 3rd arrow
5-8	Strike Shot	Aim between the 2nd and 3rd arrow
4-7	10 Boards Right	Aim between the 2nd and 3rd arrow
1-3-5-6	5 Boards Left	Aim between the 2nd and 3rd arrow
1-3-6-10	5 Boards Left	Aim between the 2nd and 3rd arrow
1-3-6-9	5 Boards Left	Aim between the 2nd and 3rd arrow
3-5-6-9	6 Boards Left	Aim between the 2nd and 3rd arrow
2-4-7-8	6 Boards Right	Aim between the 2nd and 3rd arrow

Right Hand		
Spare	Move	Target
2-4-5	6 Boards Right	Aim between the 2nd and 3rd arrow
1-2-8	2 Boards Right	Aim between the 2nd and 3rd arrow
2-4-8	3 Boards Right	Aim between the 2nd and 3rd arrow
4-7-8	7 Boards Right	Aim between the 2nd and 3rd arrow
3-6-9	6 Boards Left	Aim between the 2nd and 3rd arrow
3-6-10	6 Boards Left	Aim between the 2nd and 3rd arrow
6-9-10	7 Boards Left	Aim between the 2nd and 3rd arrow
1-5	Strike Shot	Aim between the 2nd and 3rd arrow
2-4	5 Boards Right	Aim between the 2nd and 3rd arrow
2-8	3 Boards Right	Aim between the 2nd and 3rd arrow
3-6	6 Boards Left	Aim between the 2nd and 3rd arrow
4-7	8 Boards Right	Aim between the 2nd and 3rd arrow
4-8	6 Boards Right	Aim between the 2nd and 3rd arrow
5-8	1 Board Right	Aim between the 2nd and 3rd arrow
5-9	Strike Shot	Aim between the 2nd and 3rd arrow
6-10	10 Boards Left	Aim between the 2nd and 3rd arrow
1-2-4-5	4 Boards Right	Aim between the 2nd and 3rd arrow
1-2-4-7	4 Boards Right	Aim between the 2nd and 3rd arrow
1-2-4-8	4 Boards Right	Aim between the 2nd and 3rd arrow
2-4-5-8	6 Boards Right	Aim between the 2nd and 3rd arrow
3-6-9-10	6 Boards Left	Aim between the 2nd and 3rd arrow

REMEMBER- IT IS BETTER TO TAKE AS MANY PINS OUT AS POSSIBLE WITH THE BALL RATHER THAN SOLELY RELYING ON PIN ACTION.

MAKEABLE SPLITS			
SPLIT	Move	RH-LH	Target
2-4-7-10	6 Boards Left	LH	Aim between the 2nd and 3rd arrow
3-6-7-10	6 Boards Left	RH	Aim between the 2nd and 3rd arrow
2-4-10	6 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-3-4-6-7-9	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
4-7-9	10 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-8-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-8-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-6-8-10	5 Boards Left	RH	Aim between the 2nd and 3rd arrow
5-7-9	Strike Shot	RH	Aim between the 2nd and 3rd arrow
5-8-10	Strike Shot	LH	Aim between the 2nd and 3rd arrow
1-3-4-5-6-7	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
6-8-10	10 Boards Left	LH	Aim between the 2nd and 3rd arrow
3-6-7	6 Boards Left	RH	Aim between the 2nd and 3rd arrow
2-7	6 Boards Right	LH	Aim between the 2nd and 3rd arrow
9-10	6 Boards Left	RH-LH	Aim between the 2nd and 3rd arrow
7-8	8 Boards Right	RH-LH	Aim between the 2nd and 3rd arrow
5-10	Strike Shot	LH	Aim between the 2nd and 3rd arrow
5-7	Strike Shot	RH	Aim between the 2nd and 3rd arrow
3-10	6 Boards Left	RH	Aim between the 2nd and 3rd arrow
3-9-10	6 Boards Left	RH	Aim between the 2nd and 3rd arrow
2-7	6 Boards Right	LH	Aim between the 2nd and 3rd arrow
2-7-8	6 Boards Right	LH	Aim between the 2nd and 3rd arrow
1-2-4-10	6 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-6-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-3-6-7	6 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-3-4-6-7	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
4-7-10	10 Boards Right	RH-LH	Aim between the 2nd and 3rd arrow
4-5	3 Boards Right	RH-LH	Aim between the 2nd and 3rd arrow
6-7-10	10 Boards Left	RH-LH	Aim between the 2nd and 3rd arrow
5-6	3 Boards Left	RH-LH	Aim between the 2nd and 3rd arrow
4-9	10 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-5-6-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
8-9	Strike Shot	RH-LH	Aim between the 2nd and 3rd arrow
1-2-4-7-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-5-7-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-2-4-7-8-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-3-5-6-7-10	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-3-6-7-9-10	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-2-4-6-7-10	5 Boards Right	RH	Aim between the 2nd and 3rd arrow
1-3-6-7-10	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-3-4-5-6-7-10	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
1-3-6-7-9	5 Boards Left	LH	Aim between the 2nd and 3rd arrow
6-8	10 Boards Left	LH	Aim between the 2nd and 3rd arrow

Remember: it is better to take as many pins out with the ball rather than solely relying on pin action. Split-making: the smallest number pin standing will take out either the adjacent or diagonal pins.

HOOKABLE SPARES / SPLITS			
LH/RH	SPARE /SPLIT	ADJUSTMENT	TARGET
RH	2-4-5-7	5 boards right	Same as Strike target
LH	3-5-6-10	5 boards left	Same as Strike target
RH	1-2-4-7-8	3 boards right	Same as Strike target
LH	1-3-6-9-10	3 boards left	Same as Strike target
RH	3-6-10	5-9 boards left	Same as Strike target
LH	2-4-7	5-9 boards right	Same as Strike target
RH	3-6-9-10	5-9 boards left	Same as Strike target
LH	2-4-7-8	5-9 boards right	Same as Strike target
RH	1-2-4-9	1 board right	Same as Strike target
LH	1-3-6-8	1 board left	Same as Strike target
RH	2-4-5-8	3 boards right	Same as Strike target
LH	3-5-6-9	3 boards left	Same as Strike target
RH	1-3-8-9	2-3 boards right	Same as Strike target
LH	1-2-8-9	2-3 boards left	Same as Strike target
RH	2-4-5	3 boards right	Same as Strike target
LH	3-5-6	3 boards left	Same as Strike target
RH	2-4-10	5-6 boards right	Same as Strike target
LH	3-6-7	5-6 boards left	Same as Strike target
RH	4-5-7	3-4 boards right	Same as Strike target
LH	5-6-10	3-4 boards left	Same as Strike target
RH	4-7-9-10	9 boards right	Same as Strike target
LH	6-7-8-10	9 boards left	Same as Strike target
RH	5-7-9	3-5 boards left	Same as Strike target
LH	5-8-10	3-5 boards right	Same as Strike target
RH	1-2-4-10	5 boards right	Same as Strike target
LH	1-3-6-7	5 boards left	Same as Strike target
RH	1-3-6-9	2 boards left	Same as Strike target
LH	1-2-4-8	2 boards right	Same as Strike target
RH / LH	5-8	1-2 boards right	Same as Strike target
LH / RH	5-9	1-2 boards left	Same as Strike target

Remember: Straighter is greater, but if the bowler feels like he/she is better at making the spares or splits by hooking at them, the bowler's margin of error goes down significantly. The smallest number pin standing will take out the diagonal pins if thrown correctly.

Ten in the Pit - Important Bowling Numbers

Every Bowlologist Should Know

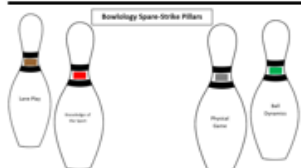
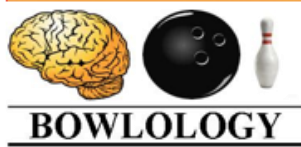
10	The maximum number of pins a bowler can knock down in one or two shots
10	The number of frames in a single bowling game
10	The number of pins on the lane
15	The number of feet from the back of the approach to the foul line
20	Minimum score per frame that a bowler can obtain for a 200 game
30	The amount of pins that a bowler can achieve in one frame
39	The number of boards on a bowling lane
60	The number of feet from the foul line to the headpin
75	The number of feet from the back of the approach to the headpin
300	The maximum score for a bowling game



King Pin



Associate



These 10 numbers are important in the sport of bowling. For Bowlologists, these numbers are essential for understanding many critical aspects of the sport. Knowing these numbers allows a bowler to achieve the level of a Bowlologist. A Bowlologist should always be able to recall these numbers. This chart is called "Ten in the Pit" to signify that by knowing these numbers, you are assured of a "strike" (having a high level of knowledge about the sport of bowling - a Bowlologist).

← The Bowlology Zones

This picture illustrates the five zones that make up Bowlology:

- Spare-Strike Pillars
- Bowlology
- Ten Pin Staffers
- Striking Mastermind
- King Pin Associate
- Bowlology Academy

Bowler Inventory Guide

Balls	Bowler needs one plastic ball for spares, a benchmark ball, a ball that gives a bowler a feel for the lane conditions and three more balls with different layouts and surfaces.
Tape	Texture to put on bowlers hands and or finger or thumbhole.
Wrist support	To keep a bowlers wrist in the proper position.
Glue	To re-glue the bowler's finger & thumb inserts.
Finger & Thumb inserts	If a bowler has a Switch Grip by Turbo and Interchangeable Thumb by Vise.
Shammy	To make sure all the oil gets off the ball each time the ball is thrown.
Soles & Heels	A bowler needs spares of these to be able to adjust the different approaches.
Abalon Pads	A low number on the pad, i.e. 500, will give the ball more traction and make it hook earlier. A high number on the pad, i.e. 3000, will make the ball smooth and reduce friction and make it hook later. The bowler must adjust the surface before competition starts. Once the ball is thrown for competition, bowlers cannot adjust the surface for the ball.
Shoes	One pair of good custom bowling shoes for the bowler.
Bags	Two 3 ball rollers and one tournament tote bag
Ball Cleaner	When a bowler get to the lanes. They should clean their balls before throwing practice balls.
Grip sack (Rosin bag)	A bowler can have a grip sack or rosin bag. This aids in keeping the hand dry and removes sweat.
Small Notebook	This comes in handy for a bowler to take notes on many things during competition. For example, if a bowler finds a pair they struggled on earlier, they can look back and make adjustments to figure out how to hit that pair of lanes better.
Extra Shoestrings	Quick replacement of broken shoestrings as a bowler cannot keep their balance on the approach with loose shoes.
Ball Cups	1 to 3 cups. To hold the bowler's ball after they clean or resurface ball so they do not roll away.
Shoe Brush	To clean off the bottom of their shoes to wipe off debris excess oil, etc.

Bowling Resources

Books

Bowling: How To Master The Game by Parker Bohn III
Bowling Knowledge is the Key by Fred Borden
Game Changer by Mark Baker
Bowlology by Josh Hyde
Revolutions I & II by Chip Zleke
Beyond the Basics by Ron Hatfield
Par Bowling: Progressive method of bowling instruction
Bowling Execution by John Jowdy
Balance by Bill Taylor
From Gutterballs to Strikes by Mike Durbin
How to Pick Up Spares by Michelle Mullen
Bowling for Dummies by A.J. Forrest and Lisa Iannucci
Fifty Greatest Bowlers in PBA History
Stone 8 by Len Nicholson
Bowling Fundamentals by Michelle Mullen

Magazines & Newsletters

Bowlers Journal International
Josh Hyde's Bowling Newsletter
Bowling This Month

DVD's

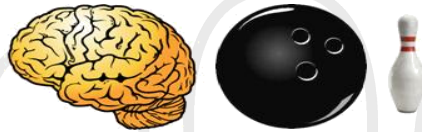
Learn to Bowl Competitively: Bowling Lessons From the Legend by Norm Duke
The System by Mark Baker featuring Chris Barnes, Tommy Jones, Lynda Barnes, Barry Asher
Becoming a Better Bowler with Walter Ray Williams Jr
Beyond the Bowling Basics featuring Parker Bohn III and Brad Angelo
Bowling Lessons from the Pros

Coaching & Training Centers

Kegel Training Center
International Training & Research Center
Bowling IQ

Bowling Manufacturers

Brunswick—Ebonite—Columbia 300—DV8—Track—Hammer—Radical
Motiv
Storm— Roto Grip— Global 900
Dexter
Big Bowling
Vise Grips
Turbo



BOWLOLOGY

This exam is for the beginner

1. How many pins does the ball hit in a perfect strike?
2. In timing what does the first and second # mean?
3. Name 3 out of 7 mistakes bowlers could get into?
4. How does a right hander read the lanes?
 - A. Right to Left
 - B. Left to Right
 - C. Side to Side
5. How does a left hander read the lanes?
 - A. Right to Left
 - B. Left to Right
 - C. Side to Side
6. How does a bowler score a strike?
7. How does a bowler score a spare?
8. How does a bowler score an open?
9. True or False? If a bowler marks in the Tenth Frame they at least get one extra ball.
10. Score Frame 1-3

9	/		x	7	2

11. In a bowler's spare game what is the best piece of equipment they can have
 - A. Resin Reactive Ball
 - B. Particle Ball
 - C. Plastic Ball
12. A right hander leaves the Ten Pin. How many boards do they need to move and what way?
13. If a bowler leaves a 6-10 spare how many boards and what way?
14. Is it better to throw a straight or a hook at a spare why?
15. In a proper release the thumb will exit the ball first. True or False?
16. Bonus Question: What is perfect game?

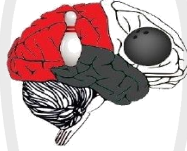
Ten Pin Staffers

Short Questions:

1. Name the three phases of ball motion.
2. If the lanes are slick, is it better to use a sanded ball or a polished ball? Why?
3. If the lanes are dry, is it better to use a sanded or a polished ball? Why?
4. Using the rule of 31, the length of the pattern is 40 feet. What is the break point?
5. What is "High RG" and "Low RG"?
6. What is "PAP"? What is a flat pattern?
7. What is "VAL"?
8. What is a flat pattern?
9. Is it better to go straight or hook the ball at single pin spare?
10. What does 2 and 1 mean, in reference to a bowler's technique adjustment?

Essay Questions:

1. A bowler is having difficulty getting to the pocket. The bowler moves right, and the ball hooks more. The bowler moves left, and the ball hooks less. What should the bowler do?
2. A bowler is 80 over and the cut is 100, with one more game to go, what does he need to shoot in order to make the cut?
3. A bowler goes into the pro shop looking to purchase a ball. Normally, bowlers want to get a ball with the most aggressive hook. How would a Pro Shop operator help make this determination?
4. A bowler is having trouble getting out of the ball. Is this due to too much forward pitch, or too much reverse pitch? How would the bowler best correct this problem?
5. The cut after 5 games was at 130 over. The cut went to 100 over. What happened to reduce the cut and why?



The Striking Mastermind program is for the higher average bowlers that bowl PBA Regional, local scratch tournaments, and “megabuck” tournaments. This quiz will enable a bowler to know more about the game and succeed in tournament play. Each question is worth five points to pass this exam the bowler must get a score of 80 out of 100. It is an exam in that hopefully tests the bowlers knowledge. This program was founded by the Ten-Pin Staffers and Josh Hyde Bowling.

1. If a bowler comes into a pro shop that has an asymmetrical ball the pro shop operator will be able to drill the ball stronger than symmetrical ball.
 - A. True
 - B. False
2. Why is it important to have a good fitting grip in all of your bowling balls?
 - A. To keep the hand in good condition
 - B. To ensure a clean release
 - C. To be able to switch bowling balls without worry
 - D. All of the above
3. In a five step approach to achieve neutral or textbook timing when should the ball and foot begin moving together?
 - A. First step of five
 - B. Second step of five
 - C. Third step of five
4. How can a Pro Shop operator help you improve your bowling ball selections?
 - A. Proper fit
 - B. Drilling layouts
 - C. Coaching
 - D. All of the above
5. Bowlers should know what and how all of their equipment reacts in order to choose the proper ball and surface in competition?
 - A. True
 - B. False
6. What is a flat pattern?
 - A. 12 to 1
 - B. 3 to 1
 - C. 1 to 1
7. If a pattern is longer in length, what type of surface grit does a bowler want on the ball?
 - A. Higher
 - B. Lower
8. Compared to a house pattern, a sport pattern typically has an oil ratio of?
 - A. 4-1 or less
 - B. 2-1 or more
 - C. 3-1 or less



9. What phase of ball motion does the ball need to be in at the backend of the lane in order to have its best chance to strike?
 - A. Roll phase
 - B. Skid phase
 - C. Hook phase
10. What is PAP?
11. When a ball is skidding too far down lane and does not get into the roll phase, what adjustments could you make?
 - A. Change to a ball with a lower surface grit
 - B. Decrease ball speed
 - C. Both A & B
12. If you need the ball to have maximum backend reaction at what degrees should the ball be rotating after the release?
 - A. 0 degrees
 - B. 45 degrees
 - C. 90 degrees
13. When shooting cross lane at a single pin spare conversion, it is better to roll your plastic ball across the lane using 0 degrees rotation so the ball goes straight toward the pin?
 - A. True
 - B. False
14. What is axis rotation
15. What is axis tilt
16. When is it better to hook at a spare, and why?
17. The typical amateur bowler most likely changes balls after the ball does not strike. Why is that not always the best thing?
18. The typical bowler will more than likely go into a pro-shop to get the most hooking ball. Why is this not always a good idea?
19. In a PBA Tournament what is lane courtesy?
20. Why should a bowler learn to tape up their ball.

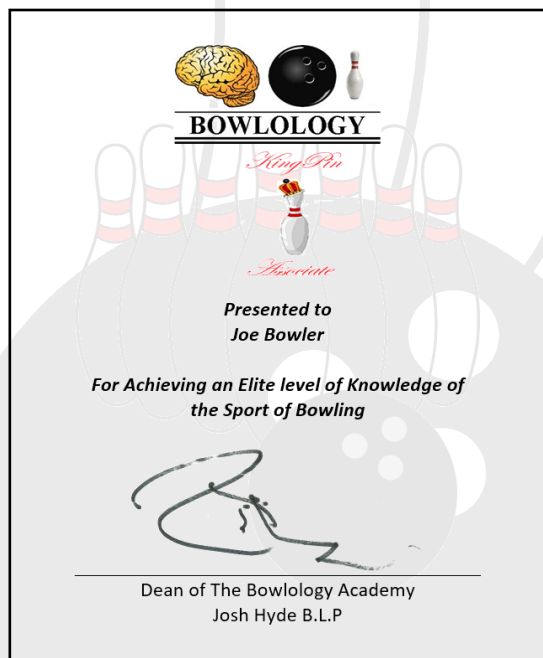
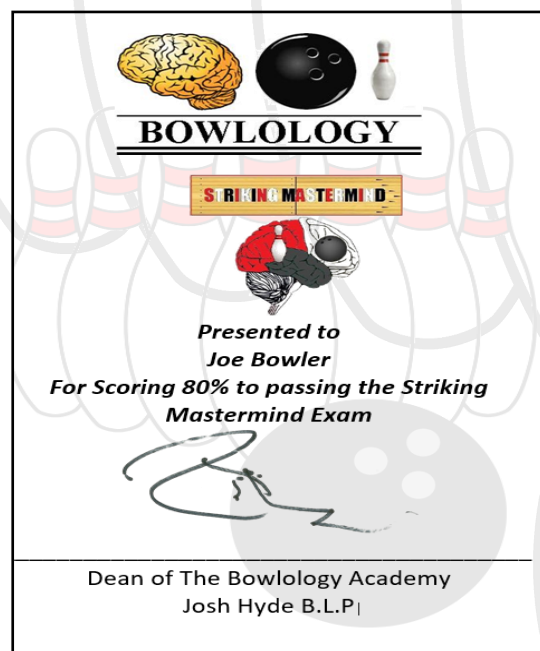
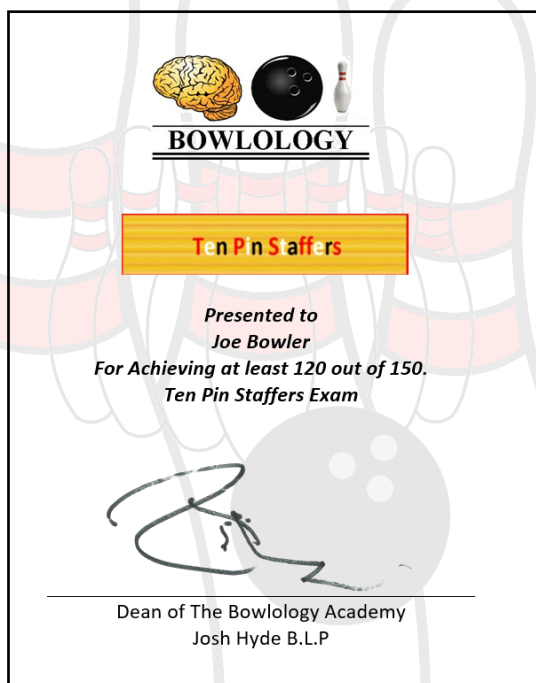
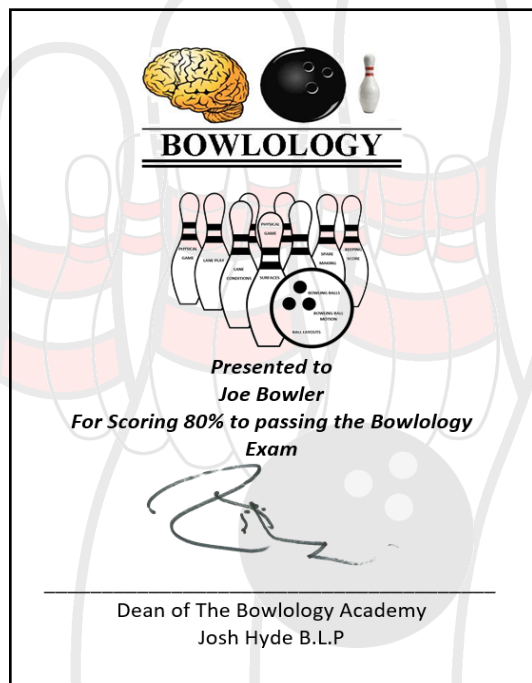
King Pin

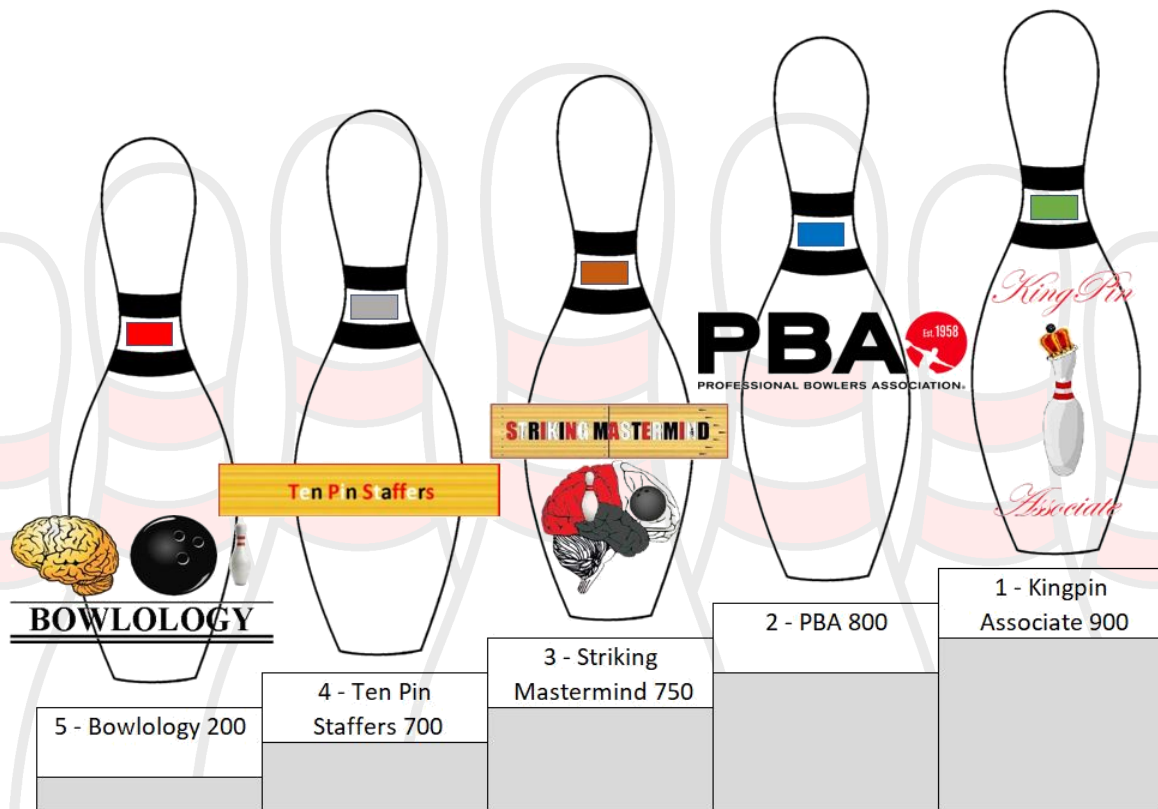


Associate

1. Should Glenn Allison's 900 be recognized by the USBC? Why or Why not?
2. Is today's bowling equipment hurting bowlers? Why or why not?
3. Should the Tournament of Champions come back as a tournament in which PBA Tour titlists can bowl, rather than including Regional and/or PBA50 Tour titlists. Why or Why not?
4. Who was the greatest bowling coach and why?
5. Should bowlers aim for the PBA or should they try to succeed in a MegaBuck Tournament and stay an amateur player?
6. As of August 1st of 2020, USBC outlaws weight holes. Is this a good idea or not?
7. Is using urethane or resin reactive equipment better for the pros?
8. Rank each of these tournaments using one through five with five being the highest: PBA Players Championship, USBC Masters, U.S. Open, PBA World Championship and Tournament of Champions. Explain the significance of these majors on the PBA Tour.
9. Should bowlers have a house shot average or a league shot average or both in order to join the PBA?
10. Should the U.S. Open be a limited field or have a multitude of bowlers bowling in this tournament?
11. In 2009 the PBA voted Earl Anthony the greatest bowler in the history of the PBA. The second greatest bowler according to the PBA was Walter Ray Williams, Jr. Which one do you think is the # 1 or do you think someone else from 1958 to 2009 should have been nominated? Give an explanation as to your answer.
12. Jason Belmonte and Mike Aulby are the only 2 players to win all Majors on the PBA Tour. Which one was the best?
13. Which was or is the best bowling innovation(s) in the history of the sport? Why?
14. Who had the best bowling form in the history of the sport? Why?
15. Who revolutionized the game the most and why?

These answers are for essay responses rather than for the purpose of receiving a certificate. It is highly recommended that the answers be concise. Bowlers and pro-shop operators can email their answers to Josh Hyde, founder of the Bowler Intelligence Agency, at joshhydeb bowling@gmail.com. They will receive a return email from Josh once he has reviewed and critiqued their answers.





Bowlology 200— is knowledge of the sport of bowling. Examples are: knowing how to keep score, correctly making spares, lane courtesy, and just basic knowledge of the sport of bowling. Bowlers that are interested in joining Bowlology will receive a certificate once they pass an exam with a score of 80% or better.

Ten Pin Staffer 700— is for coaches and pro-shop operators who know the physical game and the dynamics of a bowling ball. In order to become a Ten Pin Staffer, a bowler is required to score 130 out of a possible 150 to pass. These individuals know how to help bowlers improve their game.

Striking Mastermind 750— the Striking Mastermind exam is for the tournament bowler that wants to advance their game to the next level. The Striking Mastermind takes a score of 80 out of 100 to pass.

PBA 800— the PBA 800 course is designed for the high scratch bowler that might have cashed in a PBA Tournament as an amateur - who had a good shot early in a tournament but fell short the last couple of games. Additionally, bowlers in the class will learn how to conduct themselves as a high-level bowler. This class reviews the non-member orientation meeting more in depth.

Kingpin Associate 900— is for those individuals who know a depth of knowledge of the sport of bowling. The greatest bowlers have gone to coaches like Fred Borden, Mark Baker, John Jowdy and Del Ballard, Jr. The Kingpin Associate is for people who know the sport. In addition to knowing how to attack the lanes and bowling ball dynamics. Those who are interested to learn more about this program can email Josh Hyde at joshhydeb bowling@gmail.com.



Bowlology Academy Application



Bowlology Academy Application

Hi. I am Josh Hyde. In November of 2011, I wrote a column entitled Bowlology. This column was to educate bowlers on the sport of bowling. When I was bowling, I observed bowlers not knowing even the basics of the sport. This club is for bowlers, coaches and pro-shop operators who want to obtain knowledge of the sport of bowling. There are five levels that a person can take: Bowlology 101, Ten-Pin Staffers 700, Striking Mastermind 750, PBA 800, and Kingpin Associate 900. The Bowler will receive an email with an acceptance letter from the Bowlology Academy. In the following pages the Bowling Assessment Test will be a requirement by bowlers. This will help Bowlology Academy Dean identify the bowler's current knowledge.

Bowler Information

Name _____

High game	_____	High series	_____	High avg.	_____
700 series	_____	800 series	_____		
300 games	_____	Honor Score 298-299	_____		

Bowler Experience

1. How often do you bowl? _____
2. How many leagues do you bowl? _____
3. Do you bowl at different bowling centers? _____
4. How many bowling balls do you bring for a league and tournament? _____
5. Have you bowled in a local scratch tournament? _____
6. Do you get to bowl on a variety of oil patterns? _____
7. Have you ever bowled in a PBA Regional Tournament? _____
8. Have you bowled in the USBC Masters or US Open? _____
9. Have you ever been instructed by a bowling coach? _____
10. How long have you been bowling? _____

Contact Information

Name: _____

Email: _____

Phone #: _____

Please check which field in the bowling industry you would like to be involved in
Bowler___ Coach___ Pro-Shop Operator___ Bowling Writer___ Bowlologist___ Other___
Thank you for considering the Bowlology Academy.

Joshhydeb bowling@gmail.com

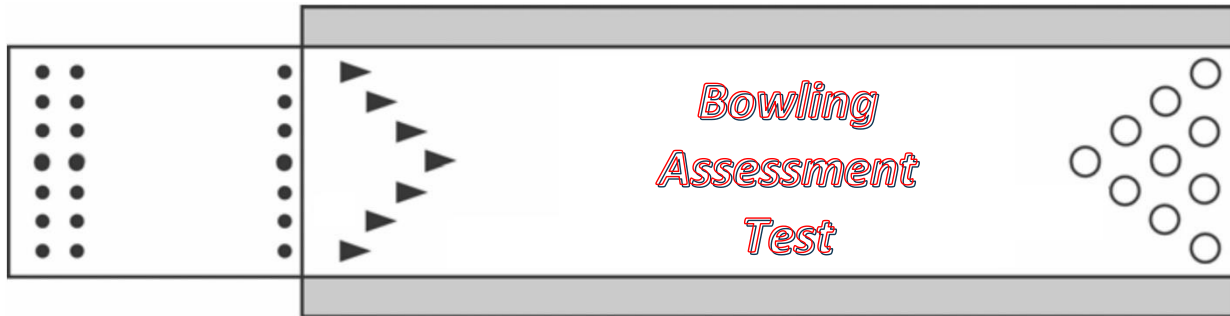
Josh Hyde B.L.P.

Dean of Bowlology Academy

1022 Pike Shore Drive, Warsaw, IN 46580

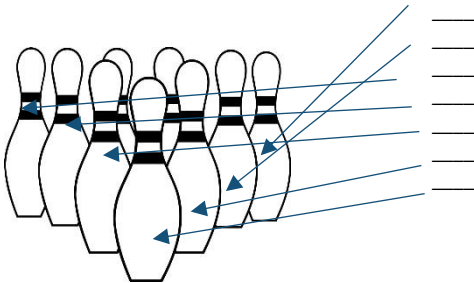


Bowlology Academy Application



This is the B.A.T. exam for the Bowlology Academy for the Bowling Assessment Test. If bowlers want to attend the Bowlology Academy, they first need to assess their current knowledge of the sport of bowling. Please note that when a bowler fills out an application, they will need to take the B.A.T Exam. My name is Josh Hyde, Dean of the Bowlology Academy. Good Luck! I look forward to working with fellow bowlers!

- 1.What is a strike?
- 2.How is a strike scored?
- 3.What is a spare?
- 4.How is a spare scored?
- 5.What is an open?
- 6.How is an open scored?
- 7.Please identify the pin numbers in the following image



8. True or False? If the only pin remaining is the ten pin and the ball goes into the gutter, then jumps back out and knocks over the ten-pin, it counts as a spare.
9. From the foul line to the head pin how many feet is the lane?
 - (A)15
 - (B)30
 - (C)60
- 10.How many boards are on the lane?
- 11.What is a perfect score?
- 12.True or False? A bowler has five consecutive strikes. They have a five bagger.
- 13.What is the best piece of equipment for making spares?
 - (A)Urethane
 - (B)Resin Reactive
 - (C)Plastic
- 14.In textbook timing, there are a pair of numbers, what does the first and second number mean?
- 15.What is early timing?



Bowlology Academy Application



16. What is late timing?

17. When shooting at spares what is the best wrist position?

- (A) Straight - Neutral
- (B) Cupped - Strong
- (C) Collapsed - Weak

18. What is the best way to shoot at spares?

19. How does a right hander read the lane?

- (A) Right to left
- (B) Left to right

20. How does a left hander read the lane?

- (A) Right to left
- (B) Left to right

21. True or False. A Pro Shop Operator can drill an extra hole to enhance the ball performance.

22. Every bowler has a P.A.P. What does this stand for?

23. Along with the P.A.P, a bowler has a _____ that goes around the ball.

24. If the lanes are slick, generally the best ball surface a bowler can use on the lane is?

- (A) Sanded
- (B) Polished

25. If the lanes are dry, generally the best ball surface a bowler can use on the lane is?

- (A) Sanded
- (B) Polished

26. Using the theory of the Rule of 31, the length of the pattern is 40, what is break point?

27. A bowler is +100 after five games. What is his current average game score?

28. A bowler is +100 after five games. There are three more games in the tournament qualifying and the current cut + / - is at +110. If the cut stays at the same scoring, what does he need to average over the next three games?

Game 1	Game 2	Game 3	Game 4	Game 5	Game 6	Game 7	Game 8	Score	+ / - 200	Current Cut + / - 200
205	225	205	240	225				1100	100	110

29. How many pins does the ball take out in a perfect strike?

30. During a tournament, a bowler decides that he needs more surface. He uses a 1500 Abralon pad during competition. Is this legal?

31. Is board 20 the same for Left-handed and Right-handed bowlers?

32. What are the phases of ball motion?

- A. Hook, Skid, Roll
- B. Roll, Skid, Hook
- C. Skid, Hook, Roll

33. How tall is a regulation bowling pin?

34. What is the circumference of a bowling ball?

35. What do they call the scale used to weigh a bowling ball?

36. True or False? The Oil Pattern is oiled from Gutter to Gutter. This is called the Flat Pattern.

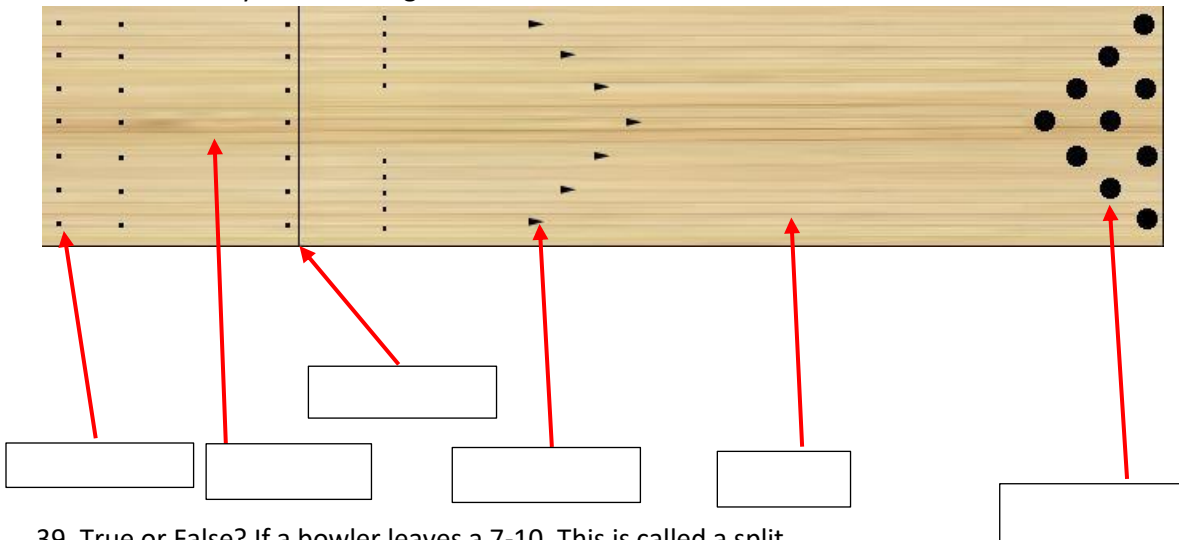
37. True or False? If a bowler takes five steps, they do not move the ball until the second step.



Bowlology Academy Application



38. Please identify the following.



39. True or False? If a bowler leaves a 7-10. This is called a split.

40. True or False? If a bowler leaves a 3-10. This is called a baby split.

41. What does PBA stand for?

42. What does USBC stand for?

43. What is the oldest bowling publication?

44. Why is the city of Reno significant to the bowling community?

45. Which one of these bowling companies is the oldest?

- A. Storm
- B. Brunswick
- C. Motiv

46. Which of these bowlers was a charter member of the PBA?

- A. Earl Anthony
- B. Dick Weber
- C. Walter Ray Williams, Jr

47. What year was the PBA founded?

- A. 1975
- B. 1958
- C. 2000

48. What year was the PBA Hall of Fame introduced?

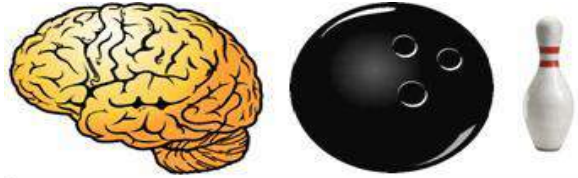
- A. 2000
- B. 1958
- C. 1975

49. Where is the International Bowling Hall of Fame & Museum?

- A. Texas
- B. Missouri
- C. Illinois

50. What bowler was the first to pass the \$1,000,000 mark in career earnings on the PBA Tour?

- A. Walter Ray Williams, Jr
- B. Dick Weber
- C. Earl Anthony



Bowlology 200

BOWLOLOGY

Twelve Sessions-

Session #1- Bowling Knowledge

Session #2- Sport and Playing Field (Perfect Strike, Pin Carry, Keeping Score)

Session #3- Physical Game (Timing, Release, and Pendulum Swing)

Session #4- Bowling Ball Motion (Skid, Hook, Roll)

Session #5- Lane Play (Adjusting, Oil Absorption, and Oil Carrydown)

Session #6- Bowling Balls (Anatomy, Layouts, and Surface)

Session #7- Greatest Minds in Bowling

Session #8- Lane Lab Discussing How Bowling is a Sport

Session #9- History of Bowling

Session #10- Pinnacle of Bowling - Discussing the 60 Greatest Moments in PBA History

Session #11- Innovative Ways to Describe or Change the Sport of Bowling (Presentations that the students give. They should express on could be made better or more challenging; or, students can create a Bowling Resume.)

Session #12- Exam

Instructor Information

Instructor

Josh Hyde Bowlologist

Email

joshhydebowl@gmail.com

General Information

Description

A better understanding of bowling, going beyond what a typical person knows about the sport.

Expectations and Goals

This course is designed to expand bowlers' knowledge on the sport of bowling. It is an opportunity for student to express their interest in making the sport of bowling better. The class will spend some time on the lanes and in the pro-shop.

Course Materials

Required Materials

Bowling Equipment: 1 to 5 balls, bowling shoes, at least 1 bowling bag, towel or shammy, notebook, **Bowling Knowledge is the Key** by Fred Borden, and **50 Greatest PBA Bowlers**.

Optional Materials

Bowling scorecard with different stats, bowlers' tape and grips.

Required Dress

Required to wear bowling jersey or shirt with slacks. Player's Name on the back of shirt is preferred.

Required Text

Game Changer by Mark Baker, Norm Duke DVD,

Ball	Brand	Surface	Layout

Extra Credit- for doing a book report on any bowling book. Students will do 100 to 500-hundred-word report on the book and or DVD.

What does the student hope to gain by taking Bowlology 101.

Student Name (Printed) _____ Date_____

Student Name (Signature) _____ Date_____

TEN PIN STAFFERS 700 Application



TEN PIN STAFFERS 700

Hi. I am Josh Hyde. Welcome to Ten Pin Staffers 700 Class. This course is designed for the pro shop operator and the coach who want to help bowlers. At Bowlology Academy, we are about helping all kinds of people who want to become a part of the bowling industry. Multiple pro shop operators and coaches do bowl on a regular basis. With the Ten Pin Staffers 700 course, they would be advancing to an elite tournament level of bowling and coaching. If you received this application, you scored high enough on the Bowling Assessment Test that the Dean of Bowlology Academy was the appropriate course for you.

Pro-Shop & Coaching Information

Name	_____	USBC Coaching	Level 1 ____
	Customer	Status	Bronze ____
Pro-Shop	Bowling Score	(Check One)	Silver ____
Name	Average		

Coaching or Pro-Shop Experience

1. How many years have you had a pro-shop? _____
2. How many balls do you drill in a given month? _____
3. Is your pro-shop in a bowling center? _____
4. What is your basic knowledge of equipment and lane play? _____
5. Do you help your customers get better with their game? _____
6. How many lane patterns have you bowled on? _____
7. Have you ever bowled in a PBA Regional Tournament? _____
8. Have you bowled in the USBC Masters or US Open? _____
9. What got you into coaching or being a pro-shop operator? _____
10. How long have you been bowling? _____

Contact Information

Name:	_____
Email:	_____
Phone #:	_____

Thank you for considering the Ten Pin Staffers 700 of the Bowlology Academy

Joshhydebowling@gmail.com
Josh Hyde B.L.P.
Dean of Bowlology Academy
1022 Pike Shore Drive, Warsaw, IN 46580

Striking Mastermind 750 Application



Striking Mastermind 750

Hi, I am Josh Hyde. This is the Striking Mastermind course which will help High Scratch bowlers move to the next level of competition. The topics include adjusting foot position, ball physics, ball selection, drilling layouts, lane patterns, lane play, adjustments, and pro tournament lane courtesy. If a bowler does not own a local pro shop, this course will educate them with the terms and knowledge so they can accurately talk to a pro shop operator.

Bowler Information

Name	_____		
High game	High series	High avg.	_____
High Sport game	High Sport series	High Sport avg.	_____

Bowler Experience

1. How often do you bowl? _____
2. How many leagues do you bowl? _____
3. Do you bowl at different bowling centers? _____
4. How many bowling balls do you bring for a league and tournament? _____
5. How many scratch tournaments do you bowl in? _____
6. Do you get to bowl on a variety of oil patterns? _____
7. Have you ever bowled in a PBA Regional Tournament? _____
8. Have you bowled in the USBC Masters or US Open? _____
9. Have you been mentored by a PBA member? _____
10. How long have you been bowling? _____

Contact Information

Name:	_____
Email:	_____
Phone #:	_____

Thank you for considering the Striking Mastermind 750

Joshhydeb bowling@gmail.com

Josh Hyde B.L.P.

Dean of Bowlology Academy

1022 Pike Shore Drive, Warsaw, IN 46580

PBA 800 Application



PBA 800

Hi. I am Josh Hyde. Welcome to the PBA 800 Class. This course is designed for the high scratch bowler that might have cashed in a PBA Tournament as an amateur - who had a good shot early in a tournament but fell short the last couple of games. Additionally, bowlers in the class will know how to conduct themselves as a high-level bowler. This class reviews the non-member orientation meeting more in depth.

Bowler Information

Name _____

High game	_____	High series	_____	High avg.	_____
High Sport game	_____	High Sport series	_____	High Sport avg.	_____

Bowler Experience

1. How often do you bowl? _____
2. How many leagues do you bowl? _____
3. Do you bowl at different bowling centers? _____
4. How many bowling balls do you bring for a league and tournament? _____
5. How many scratch tournaments do you bowl in? _____
6. Do you get to bowl on a variety of oil patterns? _____
7. Have you ever bowled in a PBA Regional Tournament? _____
8. Have you bowled in the USBC Masters or US Open? _____
9. Have you been mentored by a PBA member? _____
10. How long have you been bowling? _____

Contact Information

Name: _____

Email: _____

Phone #: _____

Thank you for considering the Bowlology 800

Joshhydebowlng@gmail.com

Josh Hyde B.L.P.

Dean of Bowlology Academy

1022 Pike Shore Drive, Warsaw, IN 46580

Bowlology

1022 Pike Shore Drive
Warsaw, IN 46580
Phone: 574.306.2076

Est. October 2011

Kingpin Associate 900

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

Cell Phone #: _____ Alternate Phone #: _____

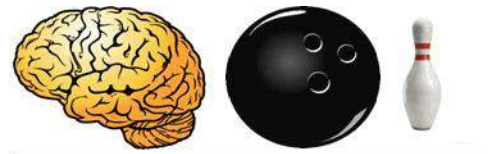
(Recommended but required)

High Game: _____ High Series: _____ High League Ave.: _____

PBA Member : _____ USBC Member : _____

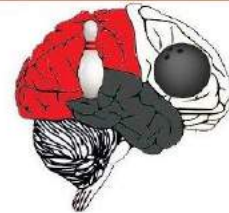
Bowlology is an innovative way to have bowlers, coaches and pro-shop operators expand their knowledge in the sport of bowling. The primary goal for bowlers, coaches and pro-shop operators is to expand their knowledge on how to knock down more pins in each frame.

On the back side of this bowling assessment are questions for you to answer so that your current bowling knowledge can be assessed. Please describe what you understand about the sport of bowling.



BOWLOLOGY

Ten Pin Staffers



When a student passes with an 80% on the KingPin Exam, they will receive an email from Josh Hyde asking whether they want to be an instructor for the Bowlology Academy. The King Pin 900 Associate Course is the top level at the Bowlology Academy. These individuals have studied the sport of bowling. In the past, these people were like John Jowdy & Chuck Pezzano. John Jowdy knew how to work with a player and get them back to striking. Chuck Pezzano knew the history of the sport and was one of the founding members of the PBA.

Mission: To Expand
Bowling Knowledge for Bowlers, Coaches,
Pro-Shop Operators in an innovative way.

Bowlologist Profile & Accomplishments

5- 300 Games
837 High Series
6-800 Series
PBA Hall of Fame Committee Member since 2014
USBC Hall of Fame Committee Member since 2020
Lifetime PBA Member
2015 TOC Media Kit
USBC Bronze & Silver Certificates
17 IBMA Editorial/Writing Awards
IAB Special Recognition for Lifetime Contributions to Bowling Award

Bowlology

Required Study Material

Through this course, students will obtain a higher understanding of the modern 10-pin bowling game. This course takes bowling into the 21st Century. The student that was accepted in this course scored a 240 on the Bowling Academy –bowling assessment test. Students taking this course will have a higher understanding than the average bowling league bowler. Students will be required to journal and email their entries to Josh Hyde at joshhydebowlng@gmail.com. Journal entries might include writing a summary of required text. 50% of the students' grades will be journal entries. The remaining 50% will be the King Pin Associate exam.

Required study material is listed below:

Books:

The Game Changer by Mark Baker

Beyond the Basics by James Freeman and Ron Hatfield

The 50 Greatest Players in PBA History by Luby Publishing

DVDs:

Learn to Bowl Competitively by Norm Duke

The System by Mark Baker

Past Media Guides

Bowlology Column in Josh Hyde's Bowling Newsletter

In 50 to 100 words describe the sport of bowling

Composition Journal

Tournament Reports

Syllabus

KingPin 900 Associate. There is an exam and entry into the KingPin Associate Journal. Students will be required to make an entry discussing about the topic in each of the slides below.

King Pin Associate Slide 2– Make an entry in the composition journal about what person should have been in the slide and the reasons why.

King Pin Associate Slide 3– Physical Game Advanced– Make an entry on how to bowl with the modern game.

King Pin Associate Slide 4– Make a summary of the Top Five Major Tournaments.

King Pin Associate Slide 5– Pick out a bowling specialty and describe how it will fit into a student's bowling firm.

King Pin Associate Slide 6 & 7– Describe the best bowling innovations in the history of the sport.

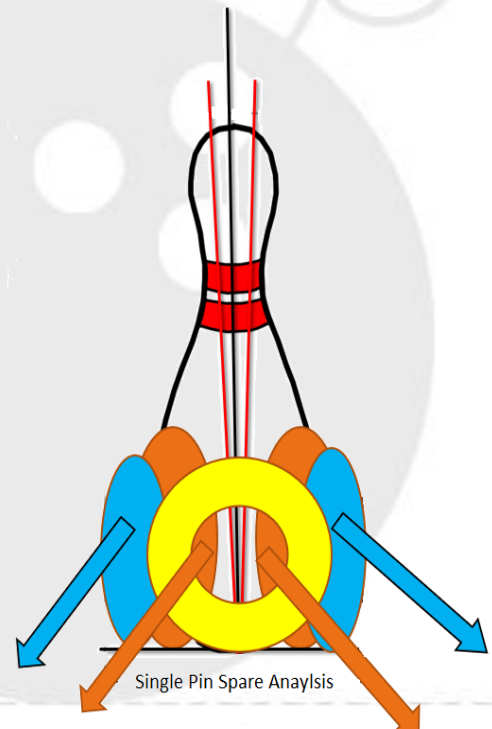
King Pin Associate Slides 8,9,10– Design a bowling firm resume with record-keeping.

Bowlology Academy Presents Single Pin Spare Analysis

This clinic discusses the factors of making single pin spares and identifies different zones to make the single pin spares. Bowlers should know to achieve a single pin spare. The ball is the one the only thing that is going to make this spare. Bowlers and pro-shop operators are more than welcome to come to this clinic to help bowlers improve their average by making these spares.

- Bowlers ultimate goal is to raise their average by making single pin spares.
- Bowlology Academy came up with three different impact zones. These zones will be discussed in great depth on how many degrees it takes to knock down a pin.
- Also discussed the best equipment in making single pin spares and how much room for margin of error.

*** Benefits improving a bowler's average at least ten pins per game***



Pinnacle of Bowling– PBA EST 1958

Learn about the Elite Level of the Bowling Industry.

The Professional Bowling Association

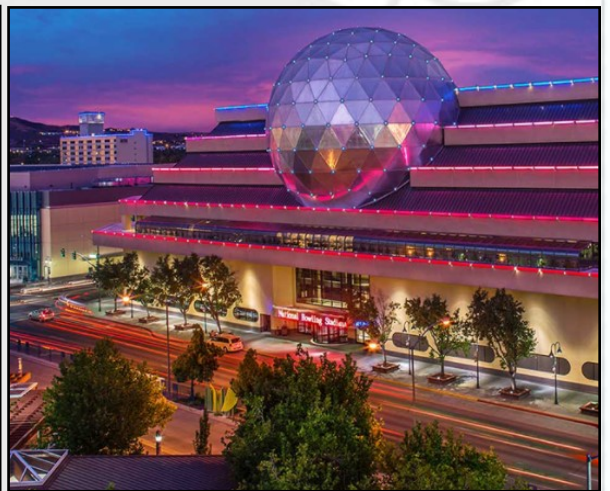
Students will have a chance at learning the history of the PBA by hearing the top five greatest PBA History and the top five greatest moments in PBA history. Students will have an opportunity to test their PBA Trivia Knowledge by passing an brief exam with a score of 80%. This will not count toward any credit for the Bowlology Academy. This clinic will be presented by Josh Hyde Honorary PBA member since 2001.



Greatest Moments in Bowling History

In this seminar students will be able to learn the Top Ten Moments in Bowling History.

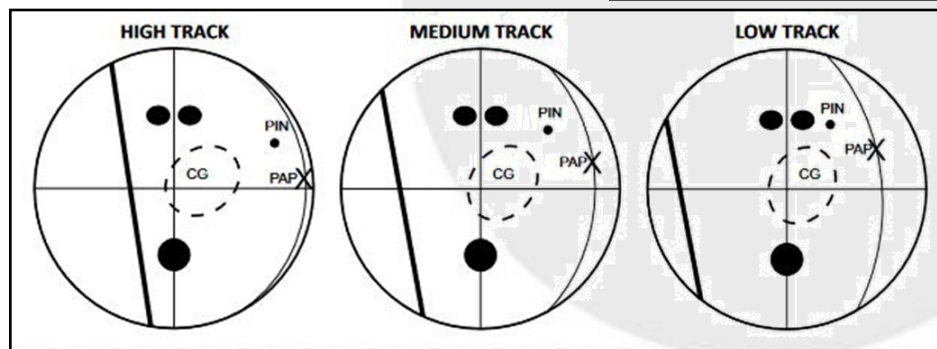
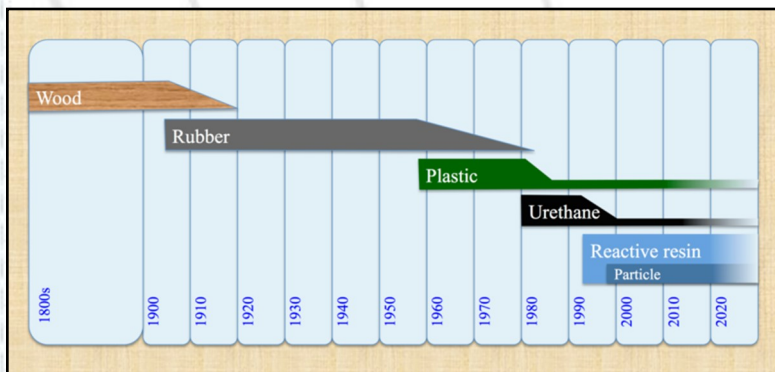
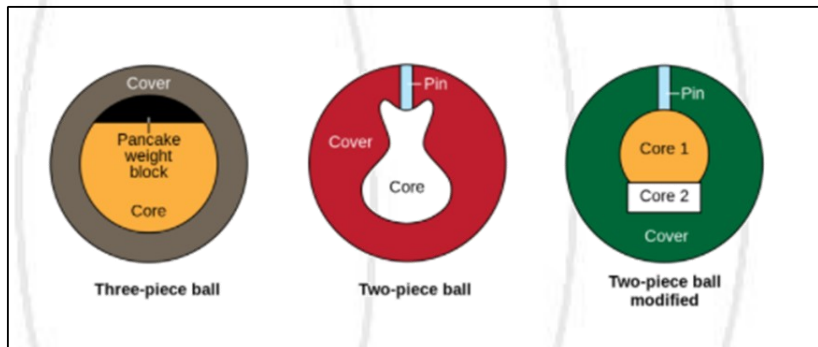
From the founding of the American Bowling Congress, currently known as the United States Bowling Congress, to the youngest bowler to win a Major on the PBA Tour, these are the greatest moments in bowling history. Other great moments in bowling history besides the PBA 60 Greatest are the first automatic pin setter and the first 900 shot. This seminar will not be credited towards the Bowlology Academy. Bowling fans will have a chance to test their knowledge about the greatest moments in bowling history with an 80% passing score.



Bowlology Academy Presents:

Evolution of a Bowling Ball

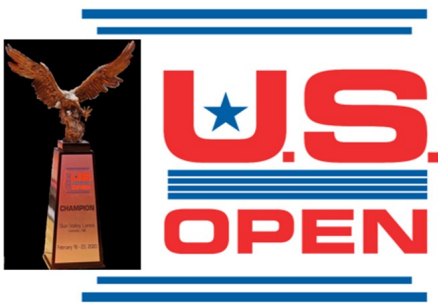
In this seminar Bowlers, Coaches and Pro-Shop Operators will have an opportunity to learn about the bowling ball and it's various parts and bowling ball technology development over the decades. The topics include coverstock, weight blocks, maintenance of a bowling ball and layouts. This seminar is a blueprint to bowling ball fundamentals. All participants will have a chance to enhance their bowling ball knowledge by taking an short exam.



PBA Majors

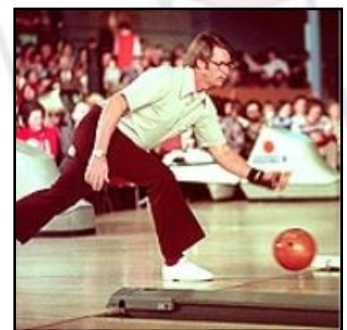
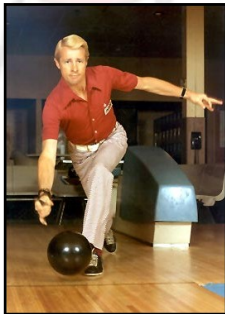
USBC Masters US Open PBA Players Championship PBA World Championship Tournament of Champions

Bowlology Academy presents the PBA Majors. These tournaments are the most challenging out of the entire PBA season. There are only two PBA players that have won every major Mike Aulby & Jason Belmonte. Earl Anthony did not win the US Open. However when he won a major he won it twice. In the PBA World Championship. He three-peated not once but twice in his career. Jason Couch three-peated the Tournament of Champions. Pete Weber completed the Triple Crown when he won the Tournament of Champions in 2013. There have only been seven players who have completed the Triple Crown. There have only been three bowlers who have completed the Grand Slam. In this seminar bowlers will have a chance to get more in-depth knowledge of what a PBA Major is and what it means to a pro-bowler.



Bowlology Academy Presents: The PBA Hall of Fame

This seminar goes through how the greatest bowlers in the world achieved the pinnacle of the PBA Hall of Fame. Bowlers like Earl Anthony, Dick Weber, and Walter Ray Williams, Jr. The PBA Hall of Fame was founded in 1975. Bowling fans are invited to learn how these greats became part of this prestigious group.



Bowlology

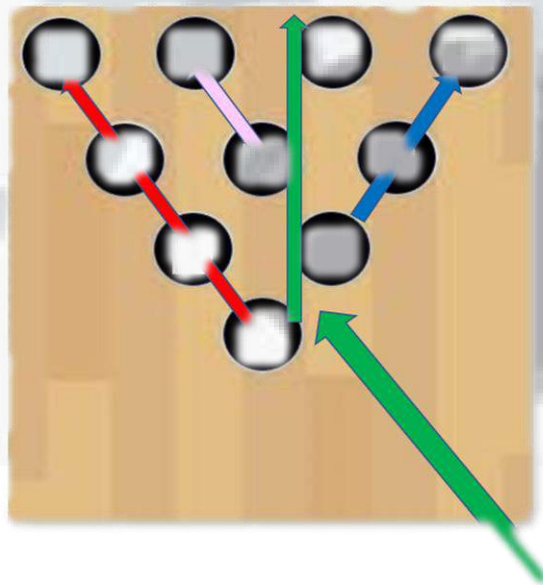
“The study of bowling with the desired result being that the student gains more knowledge of and more respect for the sport”.



BOWLOLOGY

The Perfect Strike & The Perfect Game

The goal of bowling is to knock down as many pins as a person can in ten frames. The maximum score that a bowler can bowl is a 300 each game without a strike in the first frame. It is impossible to achieve this goal what does this mean. Bowlers are not going to strike in every frame. They are going to leave pins in a certain frame. In a perfect strike the ball takes out four pins and the rest is left up to the pins. In this diagram at the bottom here. The green line represents the ball. The rest of the colors represents the pin action that needs to take place in order to obtain a strike in bowling. Twelve of these strikes in a single game can achieve a 300 score.



Frame 1- Bowling and the Playing Field.

This chapter covers the following topics:

- ❖ Philosophy of Bowlology
- ❖ Basics of Bowling
- ❖ Bowl Frame Score
- ❖ Bowling Pace
- ❖ Grinding the Game Out & Making Splits
- ❖ Keeping Score
- ❖ The Low Ball Game
- ❖ Making Spares is Crucial
- ❖ Spare Synopsis
- ❖ Right-Hand & Left-Hand Spare Conversion Charts
- ❖ Makeable Splits
- ❖ Pin Carry
- ❖ The Perfect Strike
- ❖ Lane Courtesy



Frame 2-Physical Game.

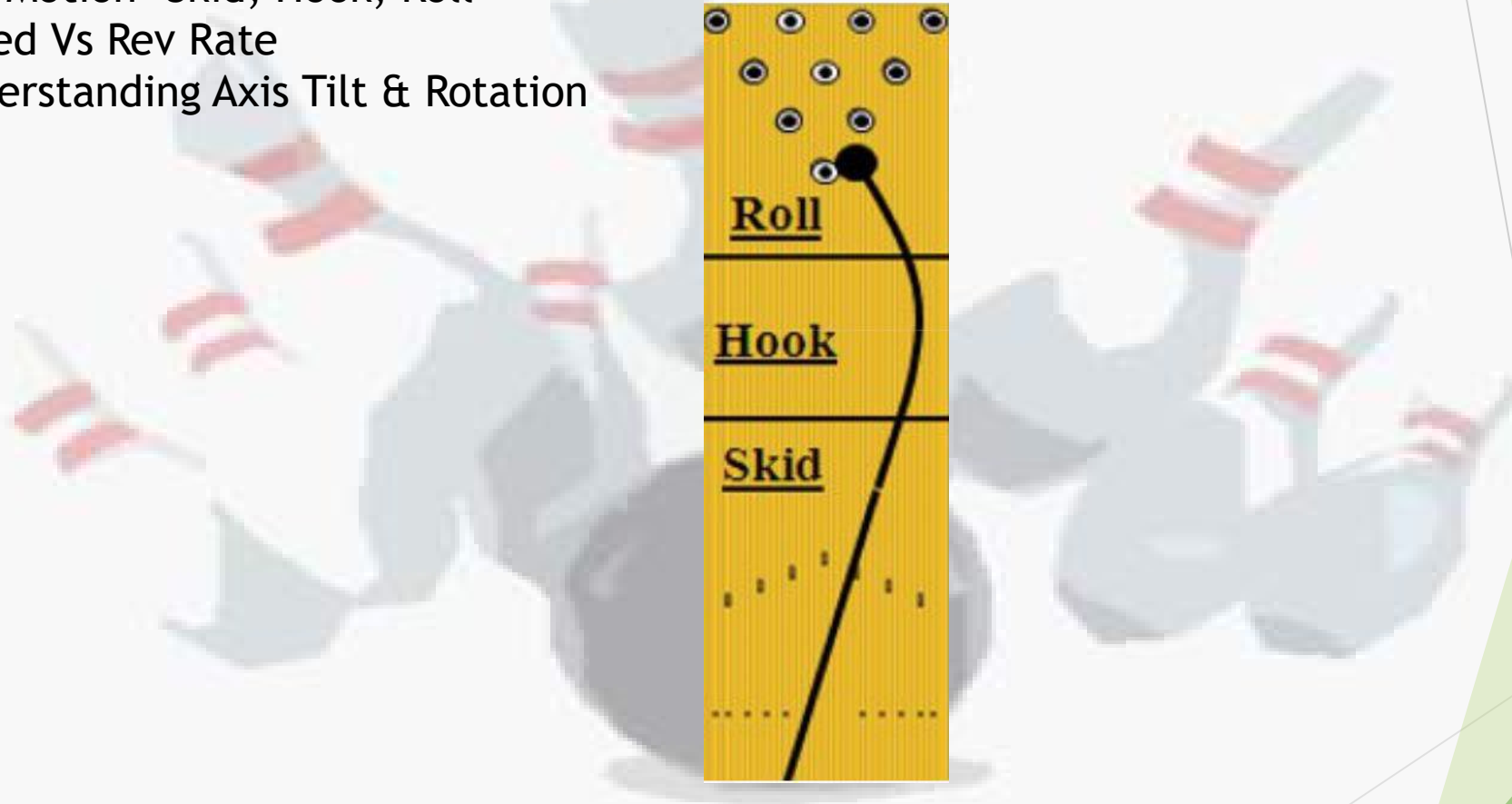
This chapter covers the following topics:

- ❖ Pre-Shot Routine
- ❖ Timing
- ❖ Pendulum Arm Swing
- ❖ Deep Knee Bends
- ❖ Trail Leg
- ❖ Wrist Position
- ❖ Release
- ❖ Finish Position



Frame 3-Bowling Ball Motion. This chapter covers the following topics:

- ❖ Ball Motion- Skid, Hook, Roll
- ❖ Speed Vs Rev Rate
- ❖ Understanding Axis Tilt & Rotation



Frame 4 –Lane Play.

This chapter covers the following topics:

- ❖ Bowling is a surface sport
- ❖ Reading a Lane Pattern Graph
- ❖ Adjusting
- ❖ Oil Breakdown
- ❖ Oil Absorption
- ❖ Oil Carrydown
- ❖ PBA Oil Ratio
- ❖ Topography



Frame 5 –Bowling Balls.

This chapter covers the following topics:

- ❖ Bowling Ball Anatomy
- ❖ Pitches
- ❖ Understanding Ball Surfaces
- ❖ Bowling Ball Evolution
- ❖ Fine-Tuning a bowler's arsenal
- ❖ Finding a bowler's Positive Axis Point
- ❖ Maximizing a bowler's PAP
- ❖ Bowling Ball Layouts
- ❖ Cleaning a Bowling Ball



Frame 6 –Great Minds of Bowling.

The names listed below are some of the greatest minds of bowling whether throwing or knowing the dynamics of a ball.

❖ Introduction to the Greatest Minds

12. Josh Hyde
11. Ray Edwards
10. Parker Bohn III
09. Mark Baker
08. Del Ballard Jr
07. Mo Pinel
06. Norm Duke
05. Johhny Petraglia
04. Carmen Salvino
03. John Jowdy
02. Bill Taylor
01. Fred Borden

Frame 7 –Bowlology Lane Lab.

This chapter can be excellent resource

- ❖ A note from a Bowlologist
- ❖ Becoming a Bowlologist
- ❖ Bowling Essentials
- ❖ Is Bowling a Sport
- ❖ Bowling Tournament Analysis
- ❖ Regulating Bowling Equipment for Professionals
- ❖ A Bowlologist View of Tournaments
- ❖ Bowling Tournament Hierarchy
- ❖ Bowlology Periodic Table
- ❖ Bowling Tournament Oil Ration Range Finder
- ❖ Bowler's Mark

Frame 8 –History of Bowling

Bowling is the oldest sport in the world. This chapter covers from 5000BC to the present day.


- ❖ Pre-1800's
- ❖ 1800's - ABC was Founded in 1895
- ❖ 20th Century
 - 1900-1920 - The WIBC was founded in 1916
 - 1920's & 30's - The BPAA was founded in 1932
 - 1940's & 50's - BPAA All-Star, PBA, Masters
 - 1960's & 70's - The bowling industry boom
 - 1980's & 90's - Bowling technology, Glen's 900
- ❖ 21st Century
 - 2000's & 2010's - PBA was purchased and USBC was formed

Frame 9 –Pinnacle of Bowling

This chapter deals with the greatest entity in the bowling industry the PBA. There are a number of bowlers that do not know the professional side of bowling. This is why in this chapter the Bowlologist wanted to share his knowledge about the greatest platform that a bowler could aim for achieving. If they established themselves in the sport. Earl Anthony, Dick Weber, and Walter Ray Williams, Jr are the three greatest bowlers of the PBA. The PBA was founded in 1958 by attorney Eddie Elias. Lou Campi would win the first PBA Tournament in 1959. The PBA would have two tournaments that were won by Dick Weber. In 1962 the PBA would have bowling on ABC's Wide World of Sports at 2:30 in the Afternoon on Saturday's for nearly 35 years. This chapter discusses about the PBA Regional Program and the PBA Majors. Bowlers like Dick Weber and Earl Anthony were on this program trying to win every tournament they could. There were other bowlers like Mark Roth, Marshall Holman, and Don Carter. These were some of the household names that bowling fans knew.

Frame 10 –60 Greatest PBA Moments

The Top 60 Greatest Moments in PBA History

- 
1. Don Johnson's 299 at the TOC.
 2. Eddie Elias founded the PBA
 3. Kelli Kulick wins the Tournament of Champions
 4. Pete McCordic's 300 win on TV
 5. Pete Weber's 5th U.S. Open
 6. Earl Anthony's earns \$1,000,000.00 in career earnings
 7. Del Ballard 1991 Fair Lanes Open
 8. Mark Roth and 7-10 Split
 9. Bob Learn, Jr 1996 PBA Flagship Open
 10. Randy Pedersen Stone Eight
 11. Tom Daughtery-Mika Koivuniemi 299-100
 12. Jack Biondolillo "First 300 on television"

In the **Bowlology** book, the First Frame describes how to score a bowling game. This is for bowlers who want to test their skills and their knowledge of scoring to advance their bowling. Bowlers that want to test their skills can email joshhydeb bowling@gmail.com. Bowlology Academy is part of the joshhydeb bowling.com website.

1. What is a strike?

- A. Ten Pins down in 2 balls
- B. Ten Pins down in 1 ball
- C. 9 pins down in 1 ball
- D. None of the above

2. How does a bowler score a strike?

- A. Ten plus next ball
- B. Add zero
- C. Ten plus the next two balls
- D. None of the above

3. In a single game of bowling how many ____ frames are there?

4. What is a spare?

- A. Ten Pins down in 2 balls
- B. 8 Pins down in 1 ball
- C. Ten Pins down in 1 ball
- D. 9 Pins down in 2 balls

5. How does a bowler score a spare?

- A. Ten plus next ball

- B. Add nine to the frame
- C. Add eight to that frame
- D. None of the above

6. What is an open frame?

- A. When the bowler does not get a strike or a spare.
- B. 7 pins down followed by 3 pins down on the next ball.
- C. 9 pins down followed by not converting the spare
- D. None of the above

7. How is open frame scored?

8. True or False: In the tenth frame, if the bowler gets a strike or spare, they get one or two extra balls.

9. What is the maximum score a bowler can have in a single game.

- A. 300
- B. 200.
- C. 100.

10. If a bowler has strikes or spares in each frame what is that game called?

In the **Bowlology** book, the First Frame describes how to score a bowling game. This is for bowlers who want to test their skills and their knowledge of scoring to advance their bowling. Bowlers that want to test their skills can email joshhydeb bowling@gmail.com. Bowlology Academy is part of the joshhydeb bowling.com website.

1. What is a strike?

A. Ten Pins down in 2 balls

B. Ten Pins down in 1 ball

C. 9 pins down in 1 ball

D. None of the above

2. How does a bowler score a strike?

A. Ten plus next ball

B. Add zero

C. Ten plus the next two balls

D. None of the above

3. In a single game of bowling how many 10 frames are there?

4. What is a spare?

A. Ten Pins down in 2 balls

B. 8 Pins down in 1 ball

C. Ten Pins down in 1 ball

D. 9 Pins down in 2 balls

5. How does a bowler score a spare?

A. Ten plus next ball

- B. Add nine to the frame
- C. Add eight to that frame
- D. None of the above

6. What is an open frame?

- A. When the bowler does not get a strike or a spare.
- B. 7 pins down followed by 3 pins down on the next ball.
- C. 9 pins down followed by not converting the spare
- D. None of the above

7. How is open frame scored?

_____Add the score together from the previous frame._____

8. True or False: In the tenth frame, if the bowler gets a strike or spare, they get one or two extra balls.

9. What is the maximum score a bowler can have in a single game.

- A. 300
- B. 200.
- C. 100.

10. If a bowler has strikes or spares in each frame what is that game called?

Clean game

Physical Game Quiz- Frame 2

In the Bowlology Book Frame 2 is about the physical game and how they can be a better bowler. The Bowlology book in frame 2 is talked about in a textbook style of bowling. If a bowler wants advanced knowledge about their physical game, they can email Josh Hyde at joshhydeb bowling@gmail.com or check out Bowlology Academy is part of the joshhydeb bowling.com website.

1. Early timing is where the _____ moves before the _____.
2. Late timing is where the _____ moves before the _____.
3. There are a pair of numbers in regard to timing.
 - A. The first number is the ball and the second number is the feet.
 - B. The first number is the feet and the second number is the ball.
 - C. Strike & Spare
4. True or False? A cupped wrist position will result in more hook.
5. True or False? A weak wrist position is good for spares.
6. In the finish position the bowler must be in balance in order to succeed in bowling. Why is this important?
7. For a right-handed bowler they release the ball in counter-clockwise or a clockwise position. Which is it?
8. If a bowler's trail leg toe is circling is that good or bad?
9. If a bowler gets low to foul line or their knees bent or straight?
10. What does the arm swing need to be?
 - A. Pendulum
 - B. The bowler must muscle the ball.
 - C. Release toward concourse.

Physical Game Quiz- Frame 2

In the **Bowlology** book, the Second Frame discusses Physical Game. Reading Frame 2 bowlers can gain knowledge on how to deliver the ball more effectively to repeat shots. The bowler covers one fifth of the bowling lane. Bowlology Academy is part of the joshhydeb bowling.com website. Bowlers and bowling fans can email me at joshhydeb bowling@gmail.com.

1. There are two numbers in Timing. The first number is **Ball**. The second number is **Feet**.
2. **True**/False. In the five-step approach, the bowler does not move the ball until the second step.
3. If the ball moves before the feet, it is **Early** timing.
4. If the feet move before the ball, it is **Late** timing.
5. The pivot step is the step before the slide. If the bowler takes a four-step delivery, it will be his/her **Third** step.
6. True/**False**. The swing should be a muscle swing.
7. In the approach, the knee bend allows a bowler to keep their **Balance**.
8. **True**/False. In the trail leg, the toe makes a semi-circle motion on the approach.
9. **True**/False. For a right-handed bowler, the release goes in a counterclockwise motion.
10. **True**/False. In the cupped wrist position, this allows a bowler to create the most hook.

Bowling Ball Quiz- Frame 3 &5

In the **Bowlology** book, the Third & Fifth Frame discusses Bowling Balls and Bowling Ball Motion. In this Quiz bowlers can understand about the bowling ball more. Reading Frame 5 bowlers will receive a better understanding of how the bowling ball works on the lane and how the pro-shop operator can get the ball ready for professional and amateur competition. Bowlology Academy is part of the joshhydeb bowling.com website. Bowlers and bowling fans can email me at joshhydeb bowling@gmail.com.

1. Name the order of ball motion traveling down the lane.
 - A. Hook, Skid, Roll
 - B. Skid, Roll, Hook
 - C. Skid, Hook, Roll
2. What is the pin in the bowling ball?
 - A. What bowlers knock down at end of the lane.
 - B. It tells the pro-shop operator or the bowler where the weight block is in the ball.
 - C. An extra hole in the bowling ball.
3. What is the best cover stock example?
 - A. Engine of the car.
 - B. Tire of the car
 - C. The steering wheel of the car.
4. Which one of these bests describes asymmetrical core?
 - A. Baseball
 - B. Stein
 - C. Soda can
5. Which one of these bests describes symmetrical core?
 - A. Tennis Ball
 - B. Cooking Pan

C. Water hose nozzle

6. In an asymmetrical ball what is the extra locator pin called?

A. Pin

B. Mass Bias

C. Cover stock

7. What is the best example of the weight block?

A. Engine

B. Tire

C. Windshield Wiper

8. What is PAP?

A. _____

9. A pro-shop operator can alter this on a ball so it can react's the way a bowler wants to on the lane?

A. Layout & Surface

B. Paint & Name of the Ball

C. Soaking the ball in MEK

10. Describe how a bowler can alter the surface of a ball to get a better reaction?

A. Sand the ball with a lower grit. This will make the ball hook earlier.

B. Matte this is a surface in which it is not sanded or polished. It is best when the lanes are going into transition.

C. Polished when the lanes are dry, and the bowlers cannot hit the pocket on the right side of the headpin of a right-handed bowler.

D. All of the above.

11. Describe Axis Tilt?

A. _____

12. Describe Axis Rotation?

A. _____

Bowling Ball Quiz- Frame 3 &5

In the **Bowlology** book, the Third & Fifth Frame discusses Bowling Balls and Bowling Ball Motion. In this Quiz bowlers can understand about the bowling ball more. Reading Frame 5 bowlers will receive a better understanding of how the bowling ball works on the lane and how the pro-shop operator can get the ball ready for professional and amateur competition. Bowlology Academy which is part of the joshhydeb bowling.com website. Bowlers and bowling fans can email me at joshhydeb bowling@gmail.com.

1. Name the order of ball motion traveling down the lane.
A. Hook, Skid, Roll *C. Skid, Hook, Roll*
B. Skid, Roll, Hook
2. What is the pin in the bowling ball?
A. What bowlers knock down at end of the lane.
B. It tells the pro-shop operator or the bowler where the weight block is in the ball.
C. An extra hole in the bowling ball.
3. What is the best cover stock example?
A. Engine of the car. C. The steering wheel of the car.
B. Tire of the car
4. Which one of these bests describes asymmetrical core?
A. Baseball C. Soda can
B. Stein
5. Which one of these bests describes symmetrical core?
A. Tennis Ball *C. Water hose nozzle*
B. Cooking Pan

6. In an asymmetrical ball what is the extra locator pin called?

A. Pin

C. Cover stock

B. Mass Bias

7. What is the best example of the weight block?

A. *Engine*

C. Windshield Wiper

B. Tire

8. What is PAP?

A. Positive Axis Point

9. A pro-shop operator can alter this on a ball so it can react's the way a bowler wants to on the lane?

A. *Layout & Surface*

C. Soaking the ball in MEK

B. Paint & Name of the Ball

10. Describe how a bowler can alter the surface of a ball to get a better reaction?

A. Sand the ball with a lower grit. This will make the ball hook earlier.

B. Matte this is a surface in which it is not sanded or polished. It is best when the lanes are going into transition.

C. Polished when the lanes are dry, and the bowlers cannot hit the pocket on the right side of the headpin of a right-handed bowler.

D. All of the above.

11. Describe Axis Tilt?

A. *The measurement of a bowler's ball vertically*

12. Describe Axis Rotation?

A. *The measurement of a bowler's ball horizontally*

In the **Bowlology** book, the Fourth Frame describes lane play for bowlers who are struggling at reading the lanes. This quiz will assist bowler's in reading the lanes and getting higher scores. Bowlers that want to test their skills can email joshhydeb bowling@gmail.com. Bowlology Academy is part of the joshhydeb bowling.com website.

1. When a bowler is right-handed how do they read the lanes?

- | | |
|------------------|----------------------|
| A. Left to Right | C. Up and Down |
| B. Right to Left | D. None of the Above |

2. How does a left-handed bowler read the lanes?

- | | |
|------------------|----------------------|
| A. Right to Left | C. Left to Right |
| B. Up and Down | D. None of the Above |

3. What would be the first arrow for the right hander bowler?

4. What would be the first arrow for the left-handed bowler?

5. When a ball misses to the right what way should the bowler move?

6. True or False: Every five boards there is a dot and arrow?

7. True or False: Board 20 is the same for right handers and left handers.

8. What is the second arrow for the left-handed player?

9. How far is the foul line to the headpin?

- A. 60 feet.
- B. 80 feet.
- C. 100 feet.
- D. None of the above

10. From the back of the approach to the foul line is how many feet?

In the **Bowlology** book, the Fourth Frame describes lane play for bowlers who are struggling at reading the lanes. This quiz will assist bowlers in reading the lanes and getting higher scores. Bowlers that want to test their skills can email joshhydebowling@gmail.com. Bowlology Academy is part of the joshhydebowling.com website.

1. When a bowler is right-handed how do they read the lanes?

A. Left to Right

C. Up and Down

B. Right to Left

D. None of the Above

2. How does a left-handed bowler read the lanes?

A. Right to Left

C. Left to Right

B. Up and Down

D. None of the Above

3. What would be the first arrow for the right hander bowler?

Arrow nearest to the right gutter

4. What would be the first arrow for the left-handed bowler?

Arrow nearest to the left gutter

5. When a ball misses to the right what way should the bowler move?

They should move right

6. **True** or False: Every five boards there is a dot and arrow?

7. **True** or False: Board 20 is the same for right handers and left handers.

8. What is the second arrow for the left-handed player?

The second arrow from the left gutter

9. How far is the foul line to the headpin?

A. 60 feet

B. 80 feet

C. 100 feet

D. None of the above

10. From the back of the approach to the foul line is how many feet?

15 feet

In the Bowlology book Frame 6 deals with some of the greatest minds in sport of bowling. These examples in the bowling industry have a great deal of knowledge throwing the ball and the anatomy of a bowling ball. Bowling fans and bowlers can email joshhydeb bowling@gmail.com. Bowlology Academy is part of the joshhydeb bowling.com website. This quiz not, be graded. It will be the bowler or the bowling fan with an email discussing on what they think did.

1. In bowling a bowler must have some knowledge of what adjustments that they need to make. Why is this important?
2. Bowling balls are important in how the sport is played. However, a bowler must have a good solid form to be able to repeat shots and be accurate why is this?
3. Today's pros throw the ball over the gutter cap. What is another way to accomplish this feat?
4. A car may have the best engine in the entire world but if it does not have tires on the rims it will not perform well. In bowling, a ball can have the best core, however it also needs a matching cover stock. How does the core and the cover stock work together?
5. Name two bowlers that are the greatest bowlers in the game and describe what assets they used in order to be a great bowler.
6. A bowler is having trouble hitting the pocket. They try to move right the ball goes Brooklyn and then they move left. The ball just skids and leaves a washout. What should the bowler do?
7. What is the best tournament format and why?
8. Should a bowler and a pro-shop operator have a good relationship and why?
9. Is using older technology in regard to the cover stock good or bad? and why?
10. How many balls should a weekend tournament bowler have with what kind of layouts and surfaces?

In Frame 7 of the Bowlology Book deals with a lane lab in which I discuss my thoughts and views on the sport of bowling. In this worksheet will have an opportunity to develop their own Bowlology skills. Bowlology Academy is part of the joshhyde bowling.com website. Bowlers and bowling fans can email this worksheet to joshhydeb bowling@gmail.com This quiz will not be graded. I will email the bowler or the bowling fan with an email discussing on what they think they did.

1. Describe in a 100 words or less what is a Bowlologist.
2. Put these tournaments in order what you think the bowlers would classify in the tournament hierarchy
U.S Open, Tournament of Champions, USBC Masters, PBA World Championship, PBA Players Championship, PBA WBT, PBA Regional, PBA50 Senior U.S Open, PBA50 USBC Senior Masters, PBA Regional, PBA50 Regional, USBC Open Championships, Scratch Series Tournament, City Tournament and a Sweeper.
3. Is a bowling a competitive and athletic sport? Give your answer in a 100 words or less.
4. Here is a list of some of the greatest bowlers today and yesterday put them in order of what you think it should be. Earl Anthony, Walter Ray Williams, Jr, Dick Weber, Jason Belmonte, Parker Bohn III, Norm Duke, EJ Tackett, Wes Malott, Pete Weber, Mark Roth, Mike Aulby, Marshall Holman, Francois Lavoie, Tommy Jones, Chris Barnes, Johnny Petraglia, Mike Durbin, Marshall Kent, Don Johnson, Jason Couch.
5. In a 100 words or less what does Bowling need to do to make it more recognized as a sport.

In the Bowlology book Frame 8 details the history of bowling and the creation of the sport. Bowling is the oldest sport dating back 5000 years. This worksheet is a tool for bowling fans to test their knowledge of the sport. Respond to joshhydeb bowling@gmail.com or check out Bowlology Academy which is part of the joshhydeb bowling.com website.

1. What year and what city was the American Bowling Congress founded?
2. What year was the WIBC founded?
3. In what year was the DoDo ball outlawed?
4. When was the first rubber bowling ball invented?
5. Where was the first American Bowling Congress tournament held?
6. Who bowled the first 300 game in the American Bowling Congress? A.Andy Varipapa B.Dick Weber C.Billy Knox D.Earl Anthony
7. What was the term used for the person who set up pins?
8. In 1941, the BPAA started a tournament. What was the name of this tournament?
9. In what year was the ABC Hall of Fame started?
10. In 1951, what tournament did the ABC start?
11. Which two bowlers won four BPAA All-Star tournaments?
12. In what year was the first automatic pinsetter introduced?

In the Bowlology book Frame 8 details the history of bowling and the creation of the sport. Bowling is the oldest sport dating back 5000 years. This worksheet is a tool for bowling fans to test their knowledge of the sport. Respond to joshhydeb bowling@gmail.com or Bowlology Academy is part of the joshhydeb bowling.com website.

1. What year and what city was the American Bowling Congress founded? **1895 in New York City**
2. What year was the WIBC founded? **1916**
3. In what year was the DoDo ball outlawed? **1903**
4. When was the first rubber bowling ball invented? **1905**
5. Where was the first American Bowling Congress tournament held? **Chicago**
6. Who bowled the first 300 game in the American Bowling Congress? A.Andy Varipapa B.Dick Weber **C.Billy Knox** D.Earl Anthony
7. What was the term used for the person who set up pins? **Pinboys**
8. In 1941, the BPAA started a tournament. What was the name of this tournament? **BPAA All-Star Tournament**
9. In what year was the ABC Hall of Fame started? **1941**
10. In 1951, what tournament did the ABC start? **ABC Masters**
11. Which two bowlers won four BPAA All-Star tournaments? **Don Carter and Dick Weber**
12. In what year was the first automatic pinsetter introduced? **1924**

In the **Bowlology** book, the Ninth and Tenth Frames deals with the pinnacle of bowling-the PBA and the 60 greatest moments of the history of the PBA. Bowlology Academy is part of the joshhydeb bowling.com website. Bowlers and bowling fans can email me at joshhydeb bowling@gmail.com.

1. This tournament is only for PBA champions.
 - A. U.S Open
 - B. PBA World Championship
 - C. Tournament of Champions
 - D. USBC Masters
2. In what year was the PBA founded?
 - A. 1960
 - B. 1959
 - C. 1958
 - D. 1981
3. Who founded the PBA?
 - A. Eddie Elias
 - B. Dick Weber
 - C. Don Carter
4. What pin did Don Johnson leave in the 1970 Tournament of Champions?
 - A. Seven Pin
 - B. Eight Pin
 - C. Ten Pin
5. A bowler has to carry _____ to obtain a PBA Membership?
6. True or False? There are six PBA regions in the PBA Regional Program.

A. True

B. False

7. How many titles did Mark Roth win 1978?

A. 5

B. 6

C. 8

8. This bowler is the only bowler to complete the Triple Crown Twice.

A. Mike Aulby

B. Chris Barnes

C. Pete Weber

9. Who is the first bowler to surpass \$2million dollars in career earnings?

A. Earl Anthony

B. Dick Weber

C. Walter Ray Williams Jr

10. Who was the first bowler to make a million dollars in career earnings?

A. Dick Weber

B. Earl Anthony

C. Don Carter

In the **Bowlology** book, the Ninth and Tenth Frames deals with the pinnacle of bowling-the PBA and the 60 greatest moments of the history of the PBA. Bowlology Academy is part of the joshhydeb bowling.com website. Bowlers and bowling fans can email me at joshhydeb bowling@gmail.com.

1. This tournament is only for PBA champions.
 - A. U.S Open
 - B. PBA World Championship
 - C. Tournament of Champions**
 - D. USBC Masters
2. In what year was the PBA founded?
 - A. 1960
 - B. 1959
 - C. 1958**
 - D. 1981
3. Who founded the PBA?
 - A. Eddie Elias**
 - B. Dick Weber
 - C. Don Carter
4. What pin did Don Johnson leave in the 1970 Tournament of Champions?
 - A. Seven Pin
 - B. Eight Pin
 - C. Ten Pin**
5. A bowler has to carry ____ **200** ____ to obtain a PBA Membership?
6. True or False? There are six PBA regions in the PBA Regional Program.

A. True

B. False

7. How many titles did Mark Roth win 1978?

A. 5

B. 6

C. 8

8. This bowler is the only bowler to complete the Triple Crown Twice.

A. Mike Aulby

B. Chris Barnes

C. Pete Weber

9. Who is the first bowler to surpass \$2million dollars in career earnings?

A. Earl Anthony

B. Dick Weber

C. Walter Ray Williams Jr

10. Who was the first bowler to make a million dollars in career earnings?

A. Dick Weber

B. Earl Anthony

C. Don Carter

Bowlology Exam

This Bowlology exam is 25% of the student's grade. In order to pass this exam, students must score at least 80%. Students passing with a 90% or higher will receive a note from me. If they have a high enough bowling average, I will encourage them to become a PBA member. Those students interested in becoming a coach, will be personally recommend by me to the USBC coaching staff. Thank you. It has been my pleasure to teach Bowlology 101 to you.

Bowler Name: _____

Bowler Average: _____

Bowler's High Game: _____

Bowler's High Series: _____

1. In one frame, how many balls can a bowler use to knock down all the pins?
 - A. Three
 - B. Two
 - C. One
 - D. None of the above
2. In scoring, how is a strike scored?
 - A. Ten + next Ball
 - B. Ten+ next two Balls
 - C. Three hundred
 - D. None of the above
3. How is a spare scored?
 - A. Ten + next two balls
 - B. Three hundred
 - C. Ten + next ball
 - D. None of the above
4. How many feet is it from the foul line to the head pin?
 - A. 60 feet
 - B. 30 feet
 - C. 13 feet
 - D. None of the above
5. After a ball is thrown, a pin on the far right and a pin on the far left remain. What is the term called?
 - A. Spare
 - B. Perfect game
 - C. Split

- D. None of the Above
6. When a bowler leaves the 3-pin and the 10-pin, what is that called?
 - A. Split
 - B. Wide open split
 - C. Baby split
 - D. None of the above
 7. Why is it important for a bowler to pick-up the spares?
 8. How many boards are there on a lane?
 - A. 40
 - B. 39
 - C. 100
 - D. None of the above
 9. What pins are recognized as the pocket for a right-handed bowler?
 - A. One-Three
 - B. Three-Six
 - C. One-Two
 - D. None of the above
 10. On the bowling lane, there is a dot and arrow on every fifth board.
True or False?
 11. What is early timing?
 12. What is late timing?
 13. There are a pair of numbers with regard to timing.
What does each number represent?
 14. What kind of an arm swing motion should a bowler have?
 - A. Muscle
 - B. Pendulum
 - C. Throw it back in the concourse
 - D. None of the above
 15. A cupped wrist position will give a bowler the maximum rev and hook.
True or False?
 16. A collapsed wrist position is good for spares.

True or False?

17. Why it is important to have the knees bent in the finish position?
18. The toe of the trail leg must be down and circling on the approach.
A. True or False?
19. Why is it important to be in balance at the finish position (at the foul line)?
20. For a right-hander, the release of the ball must go counterclockwise or clockwise.
Circle your choice
21. Every bowler has their own Positive Axis Point when they throw the ball.
A. True or False?
22. When is the best time to use a sanded ball?
A. When the lanes are dry
B. When the lanes are fresh
C. Neither of these
23. When is the best time to use a polished ball?
A. When the lanes are dry
B. When the lanes are fresh
C. Neither of these
24. What kind of ball is recommended for spares?
A. Resin
B. Reactive
C. Particle
D. Plastic
25. When using a pin down layout, the ball will get into a hook earlier.
True or False?
26. A bowler's track is where the ball is in contact with the lane.
True or False?
27. Name the three ball motion phases.
A. Skid, Hook, Roll.
B. Hook, Skid, Roll.
C. Roll, Skid, Hook.
28. What is the measure of Axis Tilt?

29. As soon as the ball sees the friction what will the ball do?
30. In adjusting what do Bowlers usually move?
- A. 2:1
 - B. 3:3
 - C. 5:4
31. The lanes are always changing throughout a league or tournament. What is this known as?
- A. Transition
 - B. Breakpoint
 - C. Reversal
32. Using the Rule 31 theory, what would be the breakpoint if the length of the pattern is forty feet?
- A. 10
 - B. 3
 - C. 9
33. A sport pattern ratio is
- A. 3 to 1
 - B. 12 to 1
 - C. 1 to 1
34. A flat pattern ratio is
- A. 3 to 1
 - B. 12 to 1
 - C. 1 to 1
35. The U.S. Open's pattern is flat. Are the scores going to be high or low?
Circle your choice
36. Bowlers throwing balls down the lane can cause oil carry-down .
True or False?
37. What is an example of an abstract adjustment?
- A. Ball and feet move the same amount of boards
 - B. The ball moves but the feet are in the same spot
38. What is an example of a parallel move?
- A. Ball and feet move the same amount of boards.
 - B. The ball moves but the feet are in the same spot.
39. No two lanes are the same. What do bowlers have to consider in a tournament or a league?
- A. Depressions and Crowns only

- B. The length of the pattern only
- C. Bowlers who have bowled on the pattern
- D. All of the above.

40. In 1895, what bowling organization was founded?

- A. ABC
- B. PBA
- C. WIBC
- D. BPAA

41. In what year was the first rubber ball made?

- A. 1903
- B. 1905
- C. 1916
- D. 1898

42. When was the DoDo ball outlawed?

- A. 1903
- B. 1905
- C. 1916
- D. 1898

43. In 1916, what bowling organization was founded?

- A. ABC
- B. PBA
- C. WIBC
- D. BPAA

44. Name the two bowlers who have won four BPAA All-Stars?

- A. Don Carter & Dick Weber
- B. Carmen Salvino & Don Carter
- C. Billy Welu & Dick Hoover
- D. Earl Anthony & Walter Ray Williams, Jr.

45. In 1958, who founded the PBA?

- A. Eddie Elias
- B. Frank Baker
- C. Dick Weber
- D. Don Carter

46. In 1959, the PBA held its first tournament. Who won?

- A. Dick Weber
- B. Lou "Wrongfoot" Campi
- C. Don Carter
- D. Carmen Salvino

47. Who became the first bowler to win a \$100,000 in a single season?
- A. Mark Roth
 - B. Marshall Holman
 - C. Earl Anthony
 - D. Dick Weber
48. At the 1970 Tournament of Champions, what pin did Don Johnson leave?
- A. 10 pin
 - B. 8 Pin
 - C. 9 Pin
49. In what year was the PBA Hall of Fame founded?
- A. 1975
 - B. 1968
 - C. 1941
50. Who was the first bowler to surpass one million dollars in career earnings?
- A. Walter Ray Williams Jr
 - B. Dick Weber
 - C. Earl Anthony
 - D. Mark Roth

Bowlology Exam

This Bowlology exam is 25% of student grade. By completing this exam, I will be discussing with the students who passed with a 90% or above to see if they are interested in being a bowling coach. In order to pass this exam students must pass with an 80%. Or depending on their average going on to becoming a PBA member. In regard to being a coach, I will personally recommend a student to the USBC coaching staff. Thank you it was a pleasure to be teaching Bowlology to you.

Bowler Name - _____

Bowler Average- _____

Bowler's High Game/Series- _____

1. How many balls does a bowler get to knock over all the pins?
 - A. Three
 - B. Two
 - C. One
 - D. None of the Above
2. In Scoring how is a strike scored.
 - A. Ten + Next Ball
 - B. Ten+ Next Two Balls
 - C. Three Hundred
 - D. None of the Above
3. How is a spare scored?
 - A. Ten + Next Two Balls
 - B. Three Hundred
 - C. Ten + Next Ball
 - D. None of the Above
4. How many feet is it from the foul line to the head pin?
 - A. 60 feet
5. When a pin is on one side and other pin is on the other side with the head pin. What is that called?
 - A. Split
6. What is a 3-10 called?
 - A. Baby Split
7. Why is it important for a bowler to pick-up the spares?
 - A. It is important to pick up the spares because no can get a 300 in every game and by picking up the spares. The bowlers are able to maintain a higher score.

8. How many boards are there on a lane?

- A. 40
- B. 39
- C. 100
- D. None of the above

9. What pins are recognized as the pocket for a right-handed bowler?

- A. One-Three
- B. Three-Six
- C. One-Two
- D. None of the Above

10. Every Fifth Board there is a dot and arrow.

True or False?

11. What is early timing?

- A. The ball moves before the feet move.

12. What is late timing?

- A. The feet move before the ball moves.

13. In two timing there are two numbers. What is the first number and what is the second number?

- A. The first number is the ball and the second number are the feet.

14. What kind of an arm swing do bowlers want to have?

- A. Muscle
- B. Pendulum
- C. Throw it back in the concourse
- D. None of the above

15. A cupped wrist position will give a bowler? The maximum rev and hook.

True or False?

16. A collapsed wrist position is good for spares?

True or False?

17. Why it is important to have the knees bent in the finish position?

- A. Bowlers with a good finish position are less than likely to fall off balance.

18. The toe of the trial leg must circle on the approach?

- A. True or False?

19. Why is the finish position important to be in balance at the foul line?

- A. The bowlers will more likely to post a shot.

20. For a right-hander the release must go **counterclockwise** or clockwise.
Circle One or the Other.

21. In dealing with bowling balls every bowler has their own Positive Axis Point. **True** or False?

22. When is the best time to use a sanded ball?

- A. When the lanes are dry.
- B. **When the lanes are fresh.**
- C. Neither of these.

23. When is the best time to use a polished ball?

- A. **When the lanes are dry.**
- B. When the lanes are fresh.
- C. Neither

24. What kind of ball is recommended for spares?

- A. Resin
- B. Reactive
- C. Particle
- D. **Plastic**

25. When using a pin down layout. The ball will get into a hook earlier.

True or False?

26. A bowler's track where the ball is in contact with the lane. **True** or False?

27. Name the three ball motion phases?

- A. **Skid, Hook, Roll.**
- B. Hook, Skid, Roll.
- C. Roll, Skid, Hook.

28. What is the measure of Axis Tilt?

- A. **The vertical of the ball rolling down the lane.**

29. As soon as the ball sees the friction what will the ball do?

- A. **The ball measurement is horizontal rolling down the lane.**

30. In adjusting what do Bowlers usually move?

- A. **2:1**
- B. 3:3
- C. 5:4

31. The lanes are always changing throughout a league or tournament. What is this known as?

- A. **Transition.**
- B. Breakpoint.

32. Using the theory of the rule 31. The length of the pattern is forty feet. What is the breakpoint?

A. 10

B. 3

C. 9

33. A sport pattern ratio is.

A. 3 to 1

B. 12 to 1

C. 1 to 1

34. A flat pattern ratio is?

A. 3 to 1

B. 12 to 1

C. 1 to 1

35. In the US Open pattern, the pattern is flat. Are the scores going to be high or low?

Circle one or the other.

36. Traffic on the lane can cause carry-down on the lane. True or False?

37. What is example of an abstract adjustment?

A. Ball and Feet move the same amount of boards.

B. The ball moves but the feet are in the same spot.

38. What is an example of a parallel move?

A. Ball and Feet move the same amount of boards.

B. The ball moves but the feet are in the same spot.

39. No two lanes are the same. What do bowlers have to consider in a tournament or a league?

A. Depressions and Crowns only.

B. The length of the pattern only.

C. Bowlers who have bowled on the pattern.

D. All of the above.

40. In 1895 what bowling organization was founded?

A. ABC

B. PBA

C. WIBC

D. BPAA

41. In what year was the first rubber ball made?

A. 1903

B. 1905

C. 1916

D. 1898

42. When was the DoDo ball outlawed?

- A. 1903
- B. 1905
- C. 1916
- D. 1898

43. In 1916 what bowling organization was founded?

- A. ABC
- B. PBA
- C. WIBC
- D. BPAA

44. Name the two bowlers have won four BPAA All-Stars?

- A. Don Carter & Dick Weber

45. In 1958 who founded the major bowling organizations?

- A. Eddie Elias
- B. Frank Baker
- C. Dick Weber
- D. Don Carter

46. In 1959 the PBA held it's first PBA tournament. Which bowler won?

- A. Dick Weber
- B. Lou "Wrongfoot" Campi
- C. Don Carter

47. Who became the first bowler to win a \$100,000 in a single season?

- A. Mark Roth
- B. Marshall Holman
- C. Earl Anthony

48. At the 1970 Tournament of Champions what pin did Don Johnson leave?

- A. 10 pin
- B. 8 Pin
- C. 9 Pin

49. In what year was the PBA Hall of Fame founded?

- A. 1975
- B. 1968
- C. 1941

50. Who was the first bowler to surpass one million dollars in career earnings.

- A. Walter Ray Williams Jr
- B. Dick Weber
- C. Earl Anthony
- D. Mark Roth

Ten Pin Staffers

Ten Pin Staffer-700

This course is designed for coaches and pro-shop operators

By Josh Hyde Bowlologist B.L.P.

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About the Ten Pin Staffer Program

In July of 2015, Josh Hyde Bowling devised a program to help bowlers with their game. This program is run by Josh Hyde Bowling and the people who are in the bowling industry. The program will enable scratch bowlers to reach a higher level of their knowledge of the game. The Ten Pin Staffers had to take an exam that had a possible of 150 points. They had to have a score of 130 or better to pass and become a member of the Ten Pin Staffer team. There were short answers and essay questions. These individuals are professional bowlers and leaders in the bowling industry. This program is to help bowlers if they are having problems with their game.

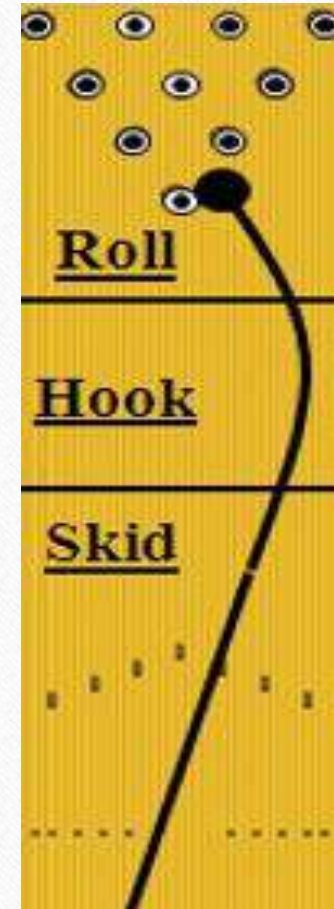
Ball Motion

Bowling ball motion is important for bowlers to understand so that they recognize what their ball is doing on the lane. There are 3 phases that the ball goes through before it hits the pins.

The first phase is called the skid phase. The characteristics of this phase are- ball speed is at its highest, the revolutions are at their lowest, and friction between the ball and the lane are also at its lowest. In the second phase, which is known as the hook phase, the ball speed decreases, revolutions increase, and friction between the ball and the lane increases. The ball, in this phase, changes direction. Lastly, the final phase is called the roll phase. In the roll phase, the ball speed is at its lowest, revolutions are at their highest, and friction between the ball and the lane are at its maximum. At this point, it is rolling in a straight line therefore losing its hitting power.

There is a myth about the roll phase - that the ball rolls before it hooks. However, it has been proven through video research that the roll phase occurs after the hook phase.

Understanding ball motion will help bowlers understand what their ball is doing when it travels down the lane.



Bowling is a Surface Sport

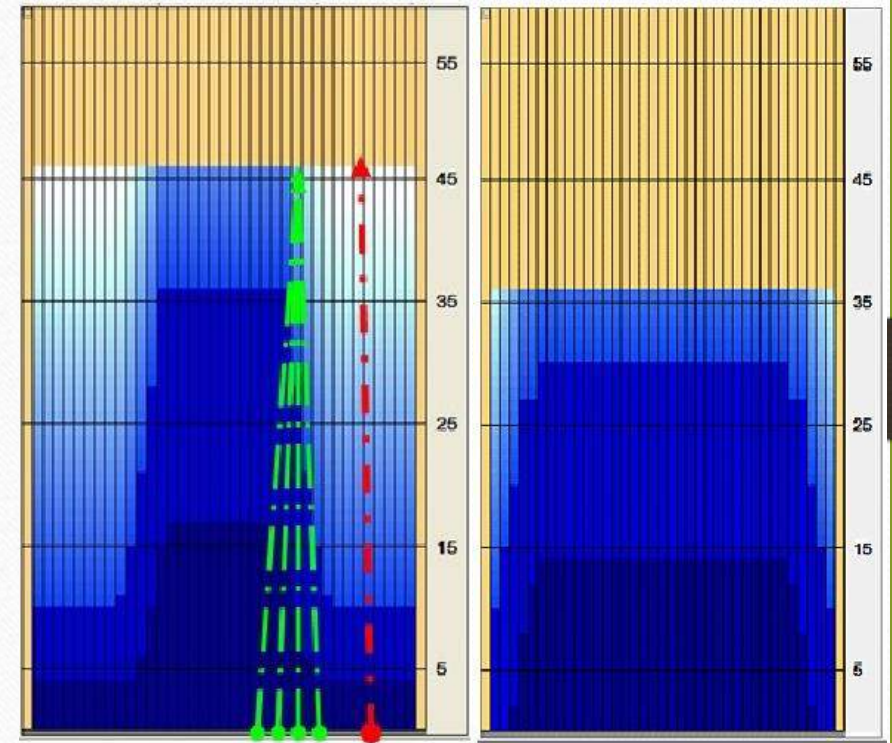
Bowling is a sport where outcomes are dependent on a surface. The more friction the lane has, the more the ball can hook. The less surface a bowler has on the lane, the less the ball can hook. Surface dictates how the ball is going to react on the lane. The longer the oil is on the lane or the higher the volume of the oil, the longer the ball will not see the friction. As soon as the ball can get into a roll or see the friction, the bowling ball will be able to hook. Bowlers are allowed to change surfaces on their ball prior to competition. This will help the bowler's ball to have more or less surface, therefore it is able to hook sooner or less if desired. The less surface that a ball has, the more it will go down the lane and will not be able to hook.

Oil Patterns

Pattern shape is the shape of the oil on the lane. The chart at the right is similar to a flat pattern and the left is a top hot pattern.

Oil volume is how much oil is on the lane and is measured in milliliters. If the Oil Ratio is 3:1, then the inner boards, boards 6-35, are oiled at a rating of say 33, while the outer boards are oiled at 11. This 3:1, inner board to outer board ratio would be an example of how the PBA Oil Ratio is used in oiling a lane.

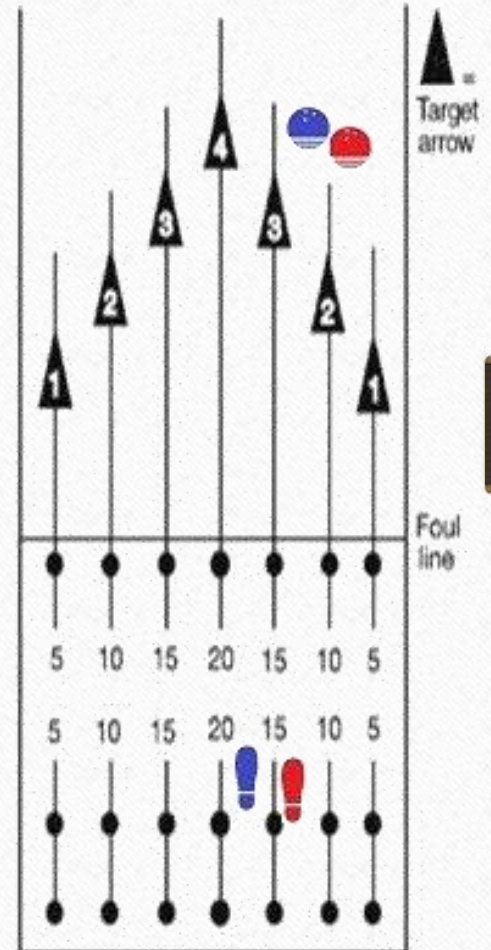
The white area of the graph (no blue color or light blue) indicates the dry area of the lane where the friction is higher.



Basic Bowler Adjustments

. Adjusting is something that is essential to a great bowler. Without adjusting, bowlers are going to have a harder time hitting the 1-3 pocket. In essence, they will have lower scores and likely will miss the cut. Amateur tend to go to a different ball rather than trying to change their target with their target with their feet and/or the ball.

When a bowler says they made a 2-and-1 move, they mean that they moved two boards with their feet, and one board with their target. Pro bowlers however, might have to make bigger adjustments so the ball can go through the pins better.



High & Low RG

High RG is where the mass is near the cover stock of the ball. These balls tend to make the breakpoint further down the lane. Meaning the ball will hook later and be more angular toward the pins. Low RG means that mass is in the center of the ball. These balls will make the breakpoint closer to the bowler meaning at the foul line. High RG and Low RG it does not necessarily mean that one ball hooks more than the other ball. It just simply means more of the weight block is distributed.

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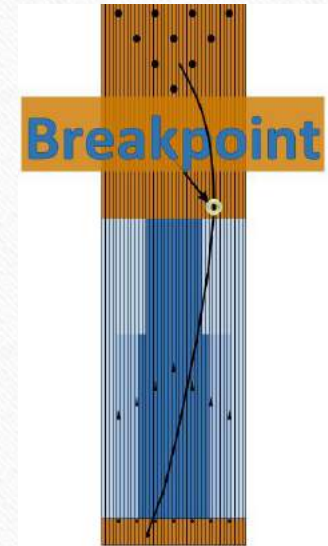


Adjustment Problems

There are bowlers who will solve the lanes quicker than other bowlers. The bowler starts off in a tournament with a 230 game, then he moves to the next pair and runs into problems. He cannot find the pocket for 2-3 frames. He is changing balls and moving his feet. By frame 8, he finally gets lined up and gets his first strike. Meanwhile, he needs at least a double to salvage the 190 game. He leaves a 3-10 baby split. He gets the spare and doubles in the 10th to shoot a 195 game. In the prior seven frames, he had a hard time finding the pocket. The moral of the example is that bowlers need to know their limitations and know how to adjust. They need to be able to find a ball that is more stable allowing them to create more margin of error to get to the pocket.

Breakpoint

There is an easier way to get bowlers lined up to the pocket. This is called rule of 31 or known as the Breakpoint. **This does not necessarily mean that bowler will be hit the pocket every time.** However, it gives them a guide by taking the length of the pattern and subtracting 31.



How to find a bowler's PAP

Have the bowler throw the ball where there is the most oil on the lane usually toward the center of the lane. Once the ball comes back through the ball return the bowler mark the oil track around the surface of the ball.

If there are multiple rings around the ball, mark the closet to the finger and thumb holes. Put the ball in the ball cup so the track is below the center of the ball and level with the table. At that point the bowler or pro shop operator will mark the top of the ball. The bowler will then throw another to see if the mark is stationary with the ball rotating around the mark when it is released.

Most bowler's axis point will be between 4 ½ and 5 ½ inches right of the grip center, left of grip center if you are left-handed, and even to one inch above the center line. If you can't see the oil track on the surface of the ball, start with the tape in this area and move it around on successive shots until its steady off your hand when the ball hits the lane.

Once you have found your release axis you can measure the distance your axis is right or left of the grip center and how far up or down from the center line it is.

TOURNAMENT BOWLING-Part 1

Scores do go up throughout the course of the tournament if it is a high scoring event where bowlers are able to hit the pocket quite easily. Bowlers can expect the scores to possibly double or go up half-way. It depends on the lane conditions and the scoring environment. If bowlers are carrying everything, then the scores will generally go up.

TOURNAMENT BOWLING-Part 2

The slide before discussed about scores going up. However, if there is a PBA Pattern involved and bowlers are not able to strike as much, then it becomes about hitting the pocket and trying to make spares and catching a double in the game. Remember - bowling is a surface sport. A tournament might look like the same as in slide 1. In this instance, however, the cut goes down and the bowlers are unable to adjust their play. As a coach and a pro-shop operator, you must tell your bowlers that they need to adjust and how they should adjust. As a pro-shop operator and a coach, you can ensure that your customer can learn something with your own tournament experiences.

Fine-Tuning Bowler's Arsenal

This slide is discussing what every Joe Bowler wants more hook with the latest and greatest bowling ball being used the top players. However, this may not always be the best-case scenario because the PBA Tour oils the lanes in higher volumes. What works for the top pros does not always work for the bowlers that bowls in league or one to two tournaments a month. You as a pro-shop operator need to know their game and their equipment. If you are a tournament bowler. It is imperative that you share your tournament knowledge with your customer. A golfer that does not have fourteen drivers and a putter. He has irons, wedges, hybrids, and drivers. Pro-shop operators need to fill the customer's bowling bag with the right equipment for the bowler's game.

Having the Right Fit

In drilling bowling balls, it is imperative that the pro-shop operator gets the ball to fit the customer's hand like a glove. A pro-shop operator must tell the bowlers the effects of forward and reverse pitch. Too much forward pitch can result in the bowler not being able to release the ball. However, vice versa with the opposite reverse pitch. If the bowler is losing the ball and not getting the proper lift, then they need to comeback and get the holes refitted. Also, it is a good idea to discuss the importance of taping the finger holes and thumb holes so the bowler can get a better feel. One way or the other can make a world of difference.

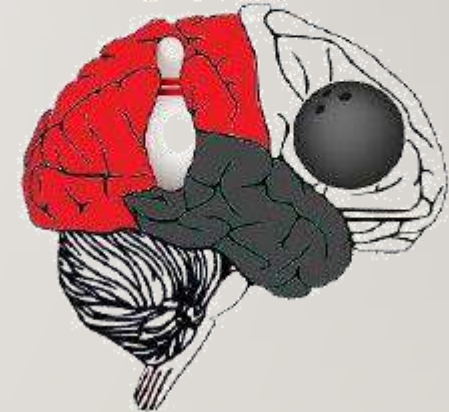
Ten Pin Staffer 700 Overview

In this course, we have given you the tools that you need to succeed in your pro-shop or coaching efforts. As a bowler, it can give you a leg up on the competition. It has been a privilege to share my knowledge as a Bowlologist and USBC Silver Coach. I hope that you improve your own personal bowling game and/or help other bowlers excel on the lanes rather than win a local tournament or cash in the U.S. Open.

Thank you for taking the Ten Pin Staffer course.

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Bowlology Academy Presents: Striking Mastermind 750



2

Hi, my name is Josh Hyde and welcome to Striking Mastermind 750. In this class, bowlers may need some more help in getting to 1-3 pocket on a sport pattern. In this course, bowlers will be able to have a leg up on the competition. It is also designed to help bowlers talk with their pro-shop operators about what they need in their bowling ball arsenal and what layouts to use. This class is for the tournament bowler. Students need to pass the course with an 80%. These Striking Mastermind students were close at winning an eagle at the Open Championship or advancing at a PBA Regional Tournament. Bowling is a surface sport and if you are not adjusting at the right time, it could cost the bowler winning an Eagle or making the cut at a PBA Regional.



3 Tools and resources that are needed for the class:

- Previous bowling knowledge-higher understanding of lane play, adjustments and ball dynamics.
- Bowling resource guide(s) – examples below:

The Game Changer by Mark Baker

Beyond the Basics by Ron Hatfield & James Freeman

Bowler's Current Ball Arsenal

Course Objectives:

In this course, students more than likely are tournament bowlers. Tournament bowling is much different than bowling in league. In league, a bowler gets three games on the same pair of lanes. In tournament bowling, however, they switch lanes after every game. This way the tournament bowler gets a feel of the whole bowling center - how each pair of lanes plays. In tournament bowling, bowlers are more knowledgeable about the sport of bowling. They are taking their game to the next level.



Bowling Ball Arsenal

4 Many golfers have a full set of clubs. They have a driver, wedges, irons, and a putter. Just like golfers, bowlers need a full set of clubs. Many amateurs want to get the most hooking-est ball on the market. They don't realize that they need balls that don't hook as much. First off and foremost, they need a (putter) plastic ball for their spares. This ball will eliminate the lane condition. The bowler will typically roll hard and straight at his or her spares. By going hard and straight at the spare, they eliminate the lane condition. The best ball to do this is with a plastic ball. The next piece in your arsenal is the wedge. This ball is for medium to dry lane conditions. This ball is one above your spare ball. If the lanes are very dry, the bowler can go to this ball. The next ball is one for medium to dry lanes. This ball is going to be less aggressive. It will be more predictable so that the bowler can read the lanes better. Maybe the bowler is struggling with one of his stronger balls and can't quite read the lane. This ball will be more predictable. The next piece of equipment is an iron. This ball is meant for medium to slick lane conditions. This ball can also be used as another driver. If the lanes are tighter, the bowler can go to this ball. Last, but not least, is the driver. This is the most hooking-est ball in the bowler's arsenal. It probably will need a stronger drilling so that it can read the lane earlier. Also, it will have the most surface to the cover stock. This ball will definitely be able to read the lane condition a lot sooner than any other ball in the bowler's arsenal. In all of these factors, it is important for the bowler to develop a relationship with the pro shop operator. This can be a real valuable tool in the bowler's game so that the bowler can attain a complete arsenal.



Finding a Bowler's Positive Axis Point

5

In order for a bowler to get a correct drilling layout, they must figure out where their positive axis point is. To do this accurately, the bowler is going to have to throw the ball where there is oil on the lane, usually toward the center of the lane. Once the ball comes back through the ball return, the bowler will mark the oil track around the surface of the ball. If there are multiple rings around the ball, mark the one closest to the finger and thumb holes. Put the ball in the ball cup so the track is below the center of the ball and level with the table. At that point, the bowler or pro shop operator will mark the top of the ball. The bowler will then throw another shot to see if the mark is stationary with the ball rotating around the mark when it is released. Most bowler's axis point will be between 4-1/2 and 5-1/2 inches right of the grip center (left of grip center if you are left-handed), and 0 to 1 inch above the center line. If you can't see the oil track on the surface of the ball, start with the tape in this area and move it around on successive shots until it is steady off your hand when the ball hits the lane. Once you have found your release axis, you can measure the distance your axis is right or left of the grip center and how far up or down from the center line it is.



Maximizing a Bowler's PAP

Understanding the bowler's positive axis point (PAP) is vital in understanding the ball reaction and pin placement in relation to the PAP. If a bowler drills a strong pin and does not have very much surface on the ball, it still will not react strongly because there is not much surface on the ball. To get the strongest drilling layout, a bowler must understand all three of these elements to get the proper ball motion: the ball surface, the layout and how the bowler releases the ball. The closer the pin is to the PAP, the less backend reaction the ball will have. The strongest layout is 3-3/8" from a bowler's PAP. This layout will give the ball the most flare potential. The closer the pin is to the PAP, the earlier the ball will get into a roll and the less reaction the ball will have on the back end of the lane.

A 6" pin will result in a ball storing more energy, going longer, and being more angular, provided the ball sees friction down the lane. Drilling a 5" pin from a bowler's PAP will result in more flare than a 6" pin drilling, which equates to a slightly earlier roll. The closer the pin is from the PAP (down to 3-3/8"), the more flare the ball has, so the 3-3/8 drilling has the most flare potential. Friction is the main component that controls how much a ball hooks and flares. The surface plays a big part in how strong a ball will react. If a bowler wants to see their ball hook earlier, they must put the pin as close to the PAP as they can, so it uses its energy at the front of the lane. The surface of the ball also influences the amount of friction that the ball can react.



Bowling Ball Layouts

7

Ball layouts are built around one fact: the ball will eventually roll over the “heaviest” part of its core, and in a reactive resin, that pretty much means what’s directly beneath the pin. After all, the pin is placed by the manufacturer at the point where the ball’s highest radius of gyration (RG) is located. So, the closer the pin is to the bowler’s initial track, the less the “heavier” part of the ball needs to move to get into an end-over-end roll, what’s sometimes called “standing up.” But when the pin is midway between the track and the positive axis point (PAP), the “heavier” part of the ball has farther to go to “stand up.” This means the core of a ball with its pin about 4” from the PAP will move more and create more track flare, which means more “fresh” ball surface is rolling over the lane. That usually produces more hook. With the pin 5-6” from the PAP, there will be less flare and less hook.

One other consideration is whether the ball is symmetrical or asymmetrical. For most bowlers, asymmetricals have a stronger reaction, so the mass bias must be considered.



Bowling Ball Layouts

For most bowlers, it comes down to this - putting the pin above the finger holes will cause the ball to delay its hooking motion. That's called "pin-up." Putting the pin below the finger holes will make the ball start to hook a little earlier but will make the hook a little smoother. This is called "pin-down." A ball with a pin about 4" from the PAP and above the finger holes will tend to have a strong, angular hook more like a hockey stick. But putting the pin 5-6" from the PAP will decrease flair and produce a less angular hook in the shape of a banana. Putting the pin about 3" from the PAP and BELOW the finger holes will produce a strong but smooth reaction, and it won't be as angular. Moving the pin closer to the track (but below the holes), will tame the reaction down even more. With pin-down, few drillers want to go left of the grip center line (for right-handers).

With asymmetrical balls, the mass bias position will enhance hook, or reduce it. Drilling the thumb hole into the MB mark, or putting the mass bias left of the hole, will produce a tamer reaction. Stronger reaction comes from putting the MB hole an inch or more to the right (for right-handers). Symmetrical balls don't have a mass bias, so the layout must account for the ball's center of gravity (CG). USBC balance rules must be followed.



Cleaning a Bowling Ball

It is important to clean a bowling ball because the ball will lose its reaction as it is being used. The recommended time to clean the ball is every 60-80 games. To do this, a bowler will need a ball spinner, ball cleaner, and Abralon pads.

To start, place the ball in the spinner with the pin up. Start sanding the ball with 180 grit for about 30 seconds. Time is important so the ball can be sanded evenly from side to side. Turn the ball 180 degrees and sand for the same amount of time. Turn the ball back to the pin up position. Repeat the same steps, but with 360 grit.

Sanding the ball smoother than 360 grit Abralon will negatively affect the ball's reaction. When the surface of the ball is too smooth, the ball will skid through the oil and will react more strongly to the dry lane.

Next, apply a small amount of Remove All (by Brunswick) ball cleaner to remove the excess oil from the pores of the coverstock. Repeat these processes until the ball reaches the bowler's desired surface. For more information on this process, the bowler needs to consult their pro shop operator.



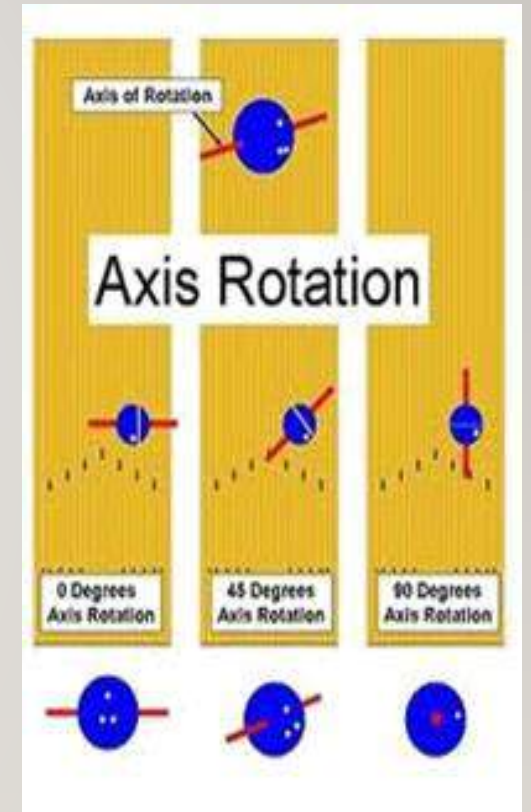
Axis Rotation

10

This topic is axis rotation, which is the horizontal measure of the angle of the ball's revolutions. Closely associated, and often confused with axis rotation, is axis tilt. Axis tilt is defined as the vertical angle at which the ball rotates.

The release position of the fingers dictates the amount of axis rotation, known also as side roll. A 0-degree axis rotation is when the fingers exit the ball at a 6 o'clock position, and the ball rolls end-over-end. This creates minimal or no hook.

If the fingers exit the ball at the 3 o'clock position, the result is more hook.



Axis Tilt

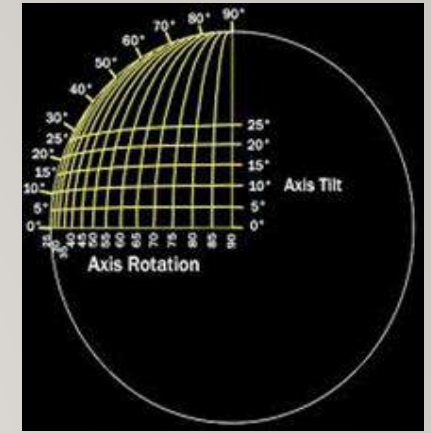
Axis tilt is the vertical angle at which the ball rotates prompting the ball to skid as it rolls down the lane. As a result, backend hook potential is reduced.

As the bowler watches the ball go down the lane, the bowler will see the opposite in axis rotation and tilt to what you see on paper regarding the vertical and horizontal axis. The more tilt the bowler employs, the more spin he creates on the ball. Axis tilt will be bad if the ball track is further from the finger holes. Axis tilt is created by either cocking or collapsing the wrist at release. At 90 degrees, the axis will be straight up. At zero degrees, the axis is on the horizontal plane. The higher the tilt, the smaller the ball will track and the longer the ball will go down the lane before hooking. The lower the tilt, the larger the ball track and the sooner the ball will hook on the lane.

A bowler can change their axis tilt by releasing the ball in different ways. If the bowler overturns the ball, it will spin like a top. However, if the bowler releases where the thumb comes out first, then the ball will have a chance to react like it is supposed to.

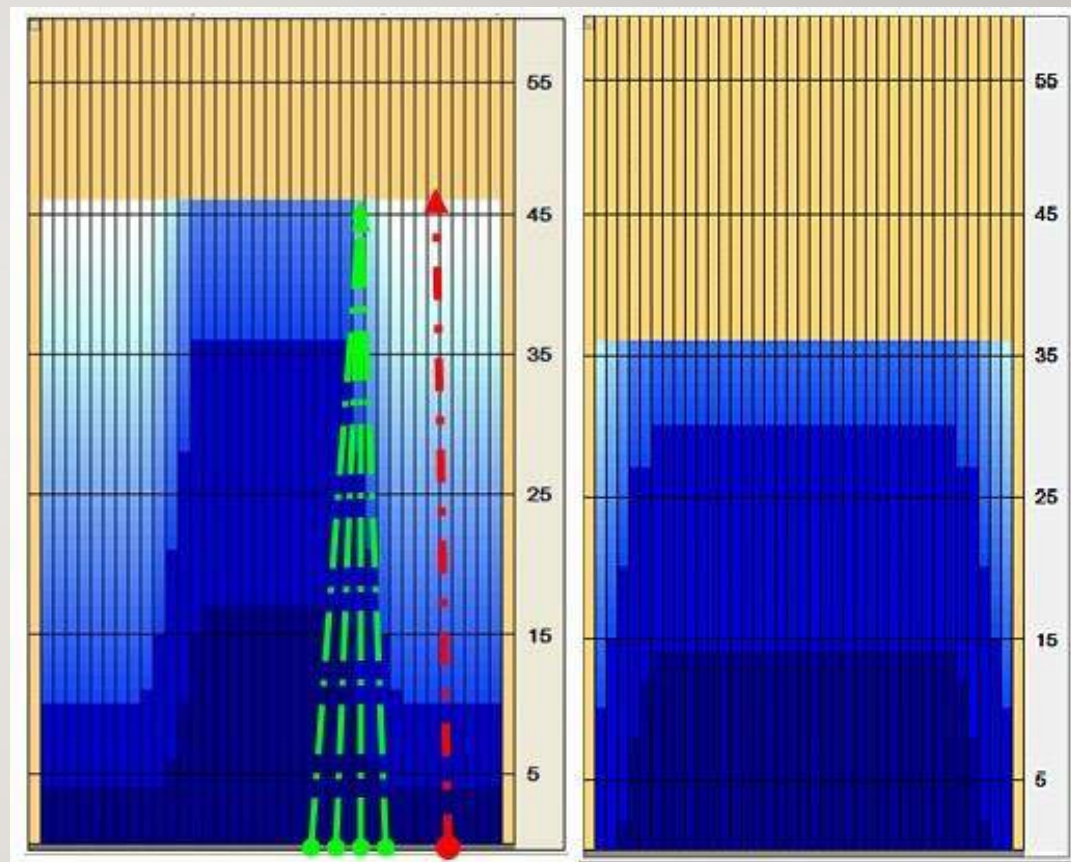
When the bowler is looking at axis tilt on paper vs. on the lane, it looks different. On paper, it is one dimensional. On the lane, it is three dimensional.

The diagram above indicates the degrees of axis tilt and axis rotation that a bowler can have. Tilt is vertical and axis rotation is horizontal.



Bowling is a Surface Sport

Bowling is a sport where outcomes are dependent on a surface. The more friction the lane has, the more the ball can hook. The less surface a bowler has on the lane, the less the ball can hook. In sports where, the balls are in the air as soon as the ball sees the friction, it is going to hook. Surface dictates how the ball is going to react on the lane. The longer the oil on the lane is, the longer the ball will not see the friction. As soon as the ball can get into a roll or see the friction, the bowling ball will be able to hook. Bowlers are allowed to change surfaces on their ball prior to competition. This will help the bowler's ball to have more or less surface, therefore it is able to hook sooner or less if desired. The less surface that a ball has, the more it will go down the lane and will not be able to hook. When the oil is longer on the lane surface, a bowler's ball is not able to see the surface and will not hook until it sees the friction on the lane. Surface is a major factor in the sport of bowling.



Reading a Lane Pattern Graph

13

The tournament host occasionally posts a graph to tell the bowlers how long the pattern is, how much oil volume is on the lane, and what the pattern looks like. So, what does all of this mean? Well, for starters, the bottom numbers (refer to graph below) are the board numbers of the lane. Forward oil (the red area of the graph) is laid down the first 16 feet of the lane, then buffed out to 44 feet. That means the oil tapers out, like down a hill. With reverse oil (green area of the graph) starting at 32 feet and continues to the heads. Bowlers will bowl down the lane from heavier oil into light oil into the backend.

Volume is how much oil is on the lane and is measured in milliliters. Pattern shape is the shape of the oil on the lane. The chart below is similar to a top hat. Other shapes are: Christmas tree, block, and flat. The white area of the graph (no green or red color) indicates the dry area of the lane where the friction is higher.



Understanding Bowling Ball Surfaces

14

What does understanding ball surfaces mean, you may ask? Well, in golf, the ball is in the air. In football, the ball is in the air. However, in bowling, the ball is going to touch the lane causing friction between the ball and the lane. Of course, the entire ball surface is not in contact with the lane at any one time. A bowler can do lots of things to make the ball hook more or less on the lane. They can drill their holes in different places to make it go longer or hook earlier down the lane. One of the ways they can accomplish this is by sanding or polishing the ball. Now, there are Abralon pads so that a bowler can alter the surface of the ball. As you can see below, the higher the grit, the less friction it creates on the lane. Conversely, the lower the grit, the more friction it creates on the lane.

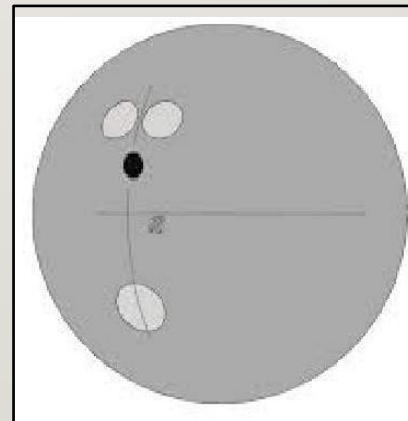
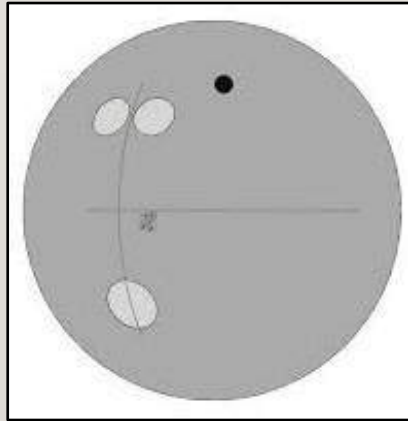
A bowler can alter the surface of the ball all the way up until the first frame of the competition. When the lanes are fresh, bowlers are going to desire more ball surface contact with the lane. When the lanes are dry, bowlers use a more polished ball. During transition, they might go to a matte ball, which reacts somewhere between a sanded and a polished ball.



Pin Up & Pin Down

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There is a myth in drilling bowling balls. The myth is if a bowler has a pin up ball, the ball will go down the lane further before it hooks. This may be true, but the actual truth is that the bowler is delaying the break point before it gets into the hook phase of the ball motion. Same thing as the pin down. The bowler is creating the breakpoint earlier instead of later. It is creating the breakpoint to start to get into the hook phase earlier than later. It all depends on the bowler's positive axis point. The pro-shop operator must know the bowler's game to know whether they need a pin up or pin down ball. Pro-shop operators and bowlers must be communicating on what the bowler needs in order to be successful on the lanes. If the bowler also has a coach and a pro-shop operator, all three of these individuals must be on the same page.



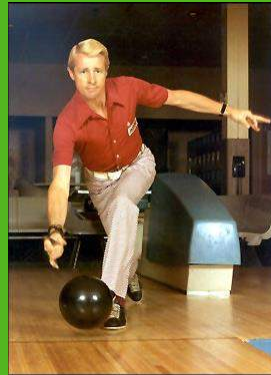
Conclusion

16

It has been my pleasure in teaching the Striking Mastermind 750. I hope each of the bowlers can get their first Eagles and/or first PBA Titles or to just get a leg up on the competition. Bowlers, I can not stress enough how important it is to build a relationship with a pro-shop operator. This will help a bowler's game to get the next level. Maybe you won't be a Pete Weber or a Jason Belmonte, but you will be able to perform at your highest level. For those of you moving on to the PBA 800 course, I look forward to working with you again. Thank you and good luck on the lanes.



PBA 800



Dean of Bowlology Academy
Josh Hyde B.L.P. Bowlologist

Introduction

I am Josh Hyde. Welcome to the PBA 800 course of the Bowlology Academy. In order to be in this course, the student has a desire to be a PBA member. This course is designed for bowlers that need the basic knowledge of how a bowler needs to conduct himself, such as: lane courtesy, weigh-in procedures, PBA attire guidelines and writing down serial numbers of the bowling balls.

I have been an honorary PBA member for 20 years. PBA is the pinnacle of bowling. Dick Weber, Walter Ray Williams and Earl Anthony are the three legends of the PBA. An attorney, Eddie Elias, from Akron, Ohio wanted to have a premier bowling league. He formed the PBA at the 1958 USBC Masters. There were 33 members that put up \$50 each to form the PBA.

Pinnacle of Bowling

The Pinnacle of Bowling is the PBA. Earl Anthony, Dick Weber, Don Carter, Walter Ray Williams, Jr., Pete Weber, Jason Belmonte, and EJ Tackett are the elite group of the greatest players in the history of the PBA. Along with many others the PBA has five majors tournaments. These tournaments are as follows. The PBA World Championship the U.S. Open, the Tournament of Champions, The USBC Masters, and the PBA Players Championship, Norm Duke, Johnnie Petraglia, Billy Hardwick, Chris Barnes, Pete Weber, Mike Aulby are the only players to complete the Triple Crown. In 2013 Pete Weber became the first bowler to complete the Triple Crown twice when he won the Tournament of Champions. These five majors are difficult to score on because of the challenging lane conditions that have less margin of error than a normal PBA tournament. In 2008 the PBA celebrated 50 years of the PBA. Earl Anthony was voted the greatest bowler in the history of the PBA. Ten years later for the 60th anniversary the PBA would come up with 60 greatest moments in PBA History. Don Johnson would have the all-time greatest moments in the 1971 Tournament of Champions by shooting a 299 in the championship game. In 1975 the PBA would have the inaugural PBA Hall of Fame. Dick Weber, Don Carter, and Carmen Salvino would be the first PBA Hall of Famers to get inducted into the hall of fame.

Chris Schenkel, Eddie Elias, and Dick Weber were the forefathers at the PBA founding.

Top Ten 60 Greatest Moments of the PBA



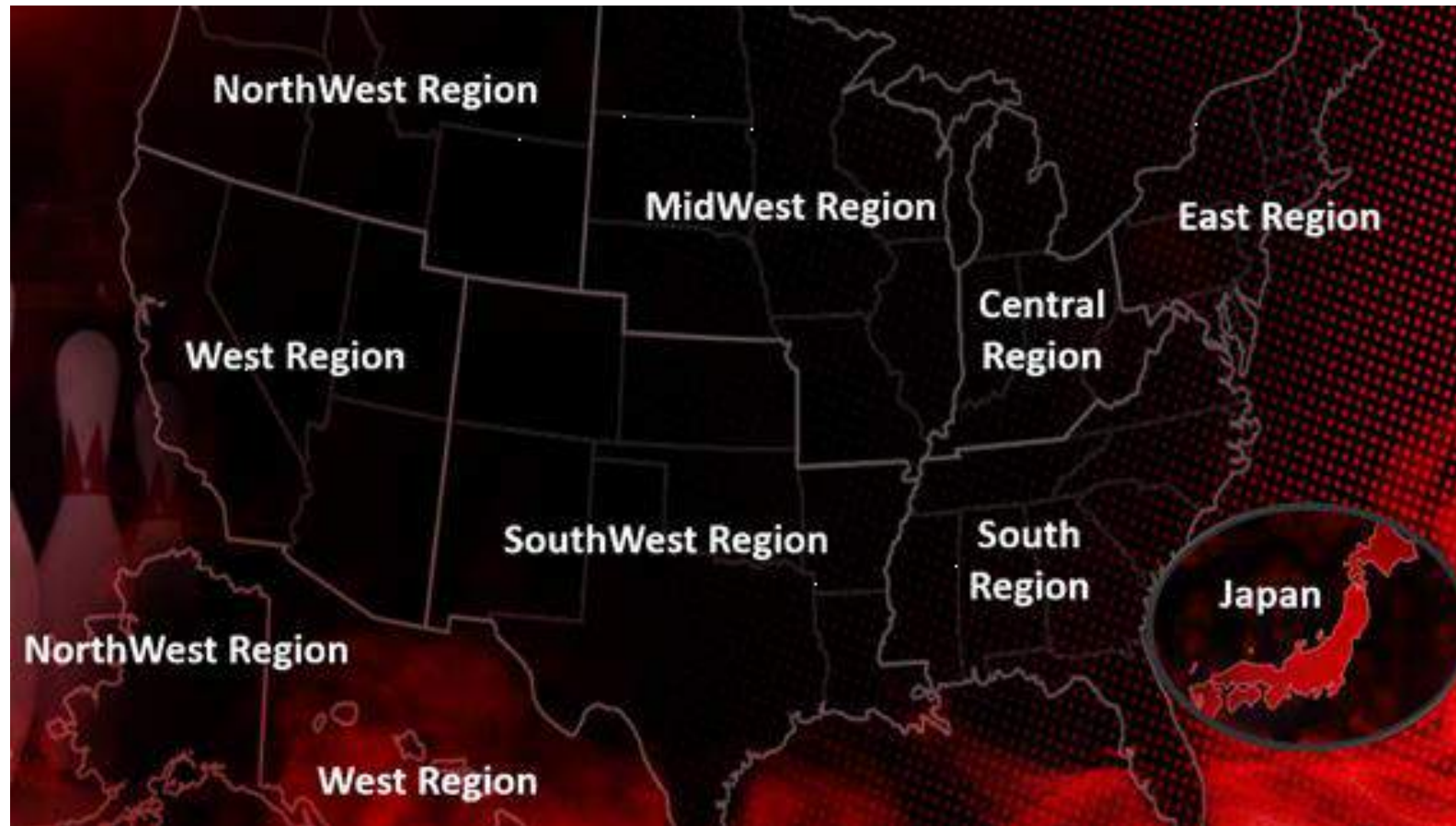
Top Ten Continued



PBA Championship Banners



PBA Regional Program



PBA50 Tour





PBA Lane Maintenance Program

PBA Player Services



PBA Membership Requirements

- Bowlers have three different options to qualify for membership in the PBA: 1. Average 200 or better within the past 12 months with a minimum of 36 games OR 2. Average 190 or better within the past 12 months with a minimum of 36 games in an USBC certified Sports League OR 3. Cash in one of the PBA's more than 180 Regional Tournaments; or open PBA Tour and PBA50 Tour tournaments.
- A bowler must be a member in good standing with the United States Bowling Congress (USBC) in order to participate in PBA events. If your USBC membership is suspended, you will not be permitted to bowl in PBA events until your USBC membership has been reinstated.

Tournament Requirements

- 1. To sign up for a tournament, you can access the list of upcoming tournaments in your Account. Select "Current" from the Tournaments & Events section of your Account Home to display the full list of upcoming events. Find the event you're interested in registering for and select the three green bars in the first column to expand the event details. If Registration is open, you will see a link that says, "Click Here to Enter This Event." Click this link to start the registration process. Please note that you can only join a PBA National Tour stop if you are a full member. If you have any questions, you can contact your PBA Regional Manager or Membership Services at customerservice@pba.com
- 2. Per calendar year, a Standard Member may bowl in three (3) Regional Tournaments, one (1) PBA Tour or PBA50 Tour event, one (1) Regional Players Championship Series event, and the U.S. Open and USBC Masters.
- 3. Patches and Bag Tags are \$3.00 each. They are available for purchase through your Regional Manager or the PBA Tour/PBA50 Tournament Directors.
- 4. On pba.com, click Menu/LANE & EQUIPMENT/Approved Equipment & Lane Resources. Then select the appropriate registered ball manufacturer to see a list of all approved equipment.
- 5. The PBA employs a one (1) pair lane courtesy at all times and is referred to as the "Double Jump" rule. A "Double Jump" occurs when, following another player's delivery on your pair, you step onto the approach before one (1) competitor on the pair to your left and one (1) competitor on the pair to the right have thrown a shot. When you master this rule, you will find that the pace of play is much smoother and faster than when using the ordinary two (2) lane courtesy rule.

PBA Titles, Awards, and Majors

- 300 Game on the first 300 a PBA member receives a ring. If they get more than one 300, they get a diamond for each additional 300 that they bowl during a PBA Regional & National. An old ring would hold up to 12 diamonds while newer rings can hold up to 28 diamonds.
- A Tournament is designated as a title. There are PBA Regional titles, PBA50 Regional titles, PBA Tour titles and PBA50 Tour titles. These different titles do not add together for the amount of titles that a PBA member has.
- These are the hardest tournaments to win because they have demanding lane conditions. The U.S Open is the hardest tournament to win. Jason Belmonte has every major won. When Belmonte won the 2020 U.S. Open. The only other player to do this was Mike Aulby. Pete Weber does not have a Master's title. Walter Ray Williams Jr does not a Tournament of Champions title.

PBA Titles, Awards, and Majors

• Awards

- Player of the Year– must have won at least one title and finished among the top ten in earnings. Any player winning multiple titles will be automatically included on the ballot.
- High Average–the player with highest average from a minimum of 180 games.
- Point Leader–The Player who accumulates the most points at the end of the PBA season.
- Rookie of the Year–must be in the top 5 of earnings & points for rookies to qualify on the ballot.
- Sportsmanship Award–awarded to any PBA Player for good conduct on the lanes by their fellow PBA members.
- Community Service Award–awarded to any PBA member for their community service and educational contributions during a season.

PBA Titles, Awards, and Majors

- Majors require more spare shooting and substantial strike skills than a regular tournament.
- A high game at these majors may be a 230–240. The highest game at a major that a bowler will shoot maybe in the 250 range.
- When a bowler gets on a pair that they can strike on. They really need to take advantage of that pair of lanes. 200 at the majors are good games to shoot. The first round of a major cannot win the tournament. However, he can lose the tournament.
- The Majors are the U.S. Open, Tournament of Champions, PBA World Championship, USBC Masters and the PBA Players Championship.

Join the Pinnacle
of Bowling.
Good Luck and
Good Scores!



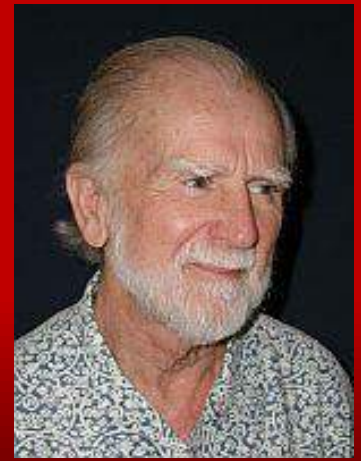
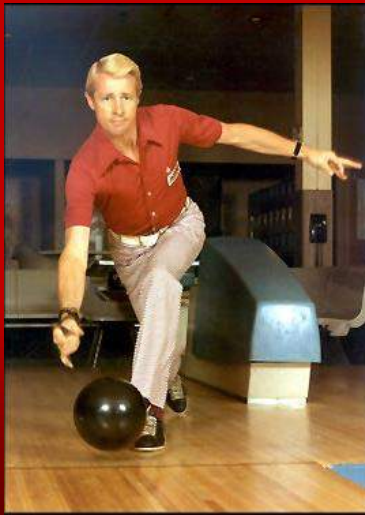
Pinnacle of Bowling-PBA





KingPin 900 Associate Course

By Josh Hyde Bowlologist B.L.P USBC Silver Level Coach



All of these individuals and many more too numerous to be pictured have taken the sport of bowling to its highest potential.

Physical Game-Advanced

Being able to identify a bowler's problems - such as how they are standing and where their finish position is, a Bowlologist can identify what is wrong with a bowler's form. John Jowdy was a legendary coach who helped a multitude of top name bowlers on the PBA Tour. Now today, it is Mark Baker. Mark Baker helped Chris Barnes and Tommy Jones advance their game to a whole new level. The Joe Bowlers of today want to throw the ball like Jason Belmonte. A good coach will turn a player's liabilities into an asset. The top 100 coaches in Bowler's Journal can identify a bowler's liabilities and abilities to make their game better. This is not basic bowling. It is advanced bowling. Jakob Buttruff has finished second at the U.S. Open three times. As for Francois Lavoie, he has won three Majors - two of them being U.S. Opens.

KingPin Associates is one of the ways that make their own ideas and forms to help other bowlers. Francois Lavoie has the most ideal bowling style on the approach, whereas, Jakob Buttruff has an unorthodox approach yet still has consistent results at the end of the approach.



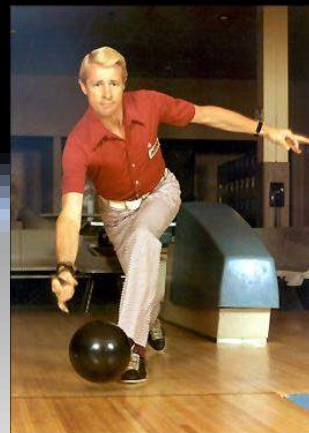
Top Professional Bowling Tournaments

A Bowlologist evaluates tournaments both professional and amateur – whether there is a local \$1,000 first place guarantee scratch tournament or the greatest tournament of them all - the U.S. Open on the PBA Tour. Jason Belmonte has the most Majors and has won all of them at least once. He completed the Super Slam at the 2020 U.S. Open. Pete Weber won ten Majors over four decades. Walter Ray Williams, Jr. had the most PBA Tour Titles. Earl Anthony had ten Majors and forty-three PBA Tour Titles. He would also win the PBA World Championship six times, three-peating the tournament twice. Norm Duke would be the third bowler to win forty PBA Tour Titles.



Bowling Specialty

Bowling has a number of different opportunities in addition to being a pro bowler. There are bowling center proprietors, pro-shop operators, coaches, and ball designers. As an example, I am going to talk about the PBA. The PBA is like the USBC. The PBA has Regional Programs (different satellite tournaments) both in the U.S. as well as Japan. However, the PBA does not have a championship for each of the regions. The PBA World Championship is like the USBC Open Championship. Earl Anthony has won six PBA World/National Championships. Eddie Elias talked with the best bowlers at the 1958 USBC Masters which was the starting point for getting the PBA founded. He asked 33 bowlers who were the charter members to put up \$50 apiece. Eddie's dream was coming true. Dick Weber, Don Carter, Carmen Salvino, Harry (The Tiger) Smith and Ray Bluth were some of the founding members. The first tournament was held in 1959. Lou "Wrongfoot" Campi would win the first one and Dick Weber would win twice. In 1960, Don Carter would win the inaugural PBA (National) World Championship. PBA Membership would grow over the years. At its height, there were 10,000 members.



Left to right: Eddie Elias, Lou "Longfoot" Campi, Dick Weber

Bowling Equipment

Throughout the last 50 years, bowling equipment has changed drastically. Bowling manufacturers have changed the cores of the ball, the ball, and the cover stock along with the layout. Pro-Shop Operators have been learning how to improve bowlers' averages just by laying out a ball differently. When weight holes were allowed, Pro-Shop Operators and bowlers could talk amongst themselves to get a better ball reaction. Even the lanes have been changed from wood to lacquer to urethane to synthetic. The bowling industry has made a tool called a rock. This tool will tell the lane mechanic how much friction is on the lane. The pins have changed from maple wood to synthetic pins which has drastically altered the scoring environment.



Bowling Equipment



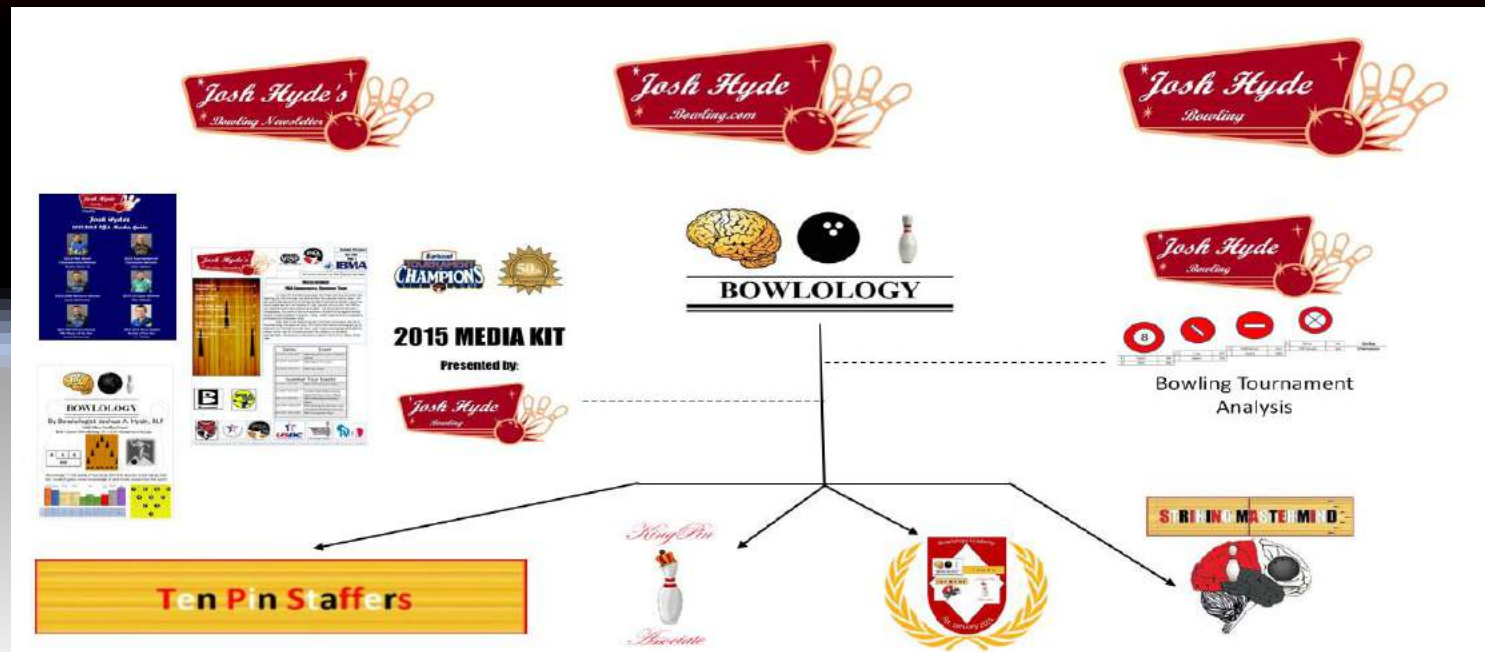
Example of a wood bowling lane.



Example of a synthetic lane

What is a Bowling Firm?

A Bowling Firm is a company in which bowlers and bowling fans can obtain information regarding the sport of bowling. If a bowler wants to improve their game, they can do some research on Bowlology and find the topic that will help them improve their game. If a bowling fan wants to know the likelihood of a pro-bowler winning a tournament, they can study the Strike Column in Josh Hyde's Bowling Newsletter. Bowling fans and bowlers also have an opportunity to review data of different professional and amateur tournaments. Bowling Tournament Analysis, both pro and amateur, can provide a resource for bowlers or bowling fans as to what the scoring environment was in a particular tournament. Below is an example of Josh Hyde's Bowling Foundation Frame.

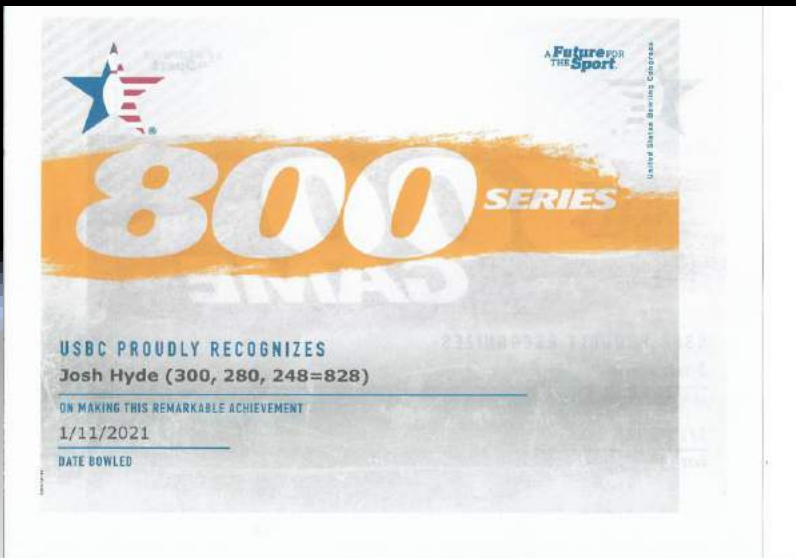


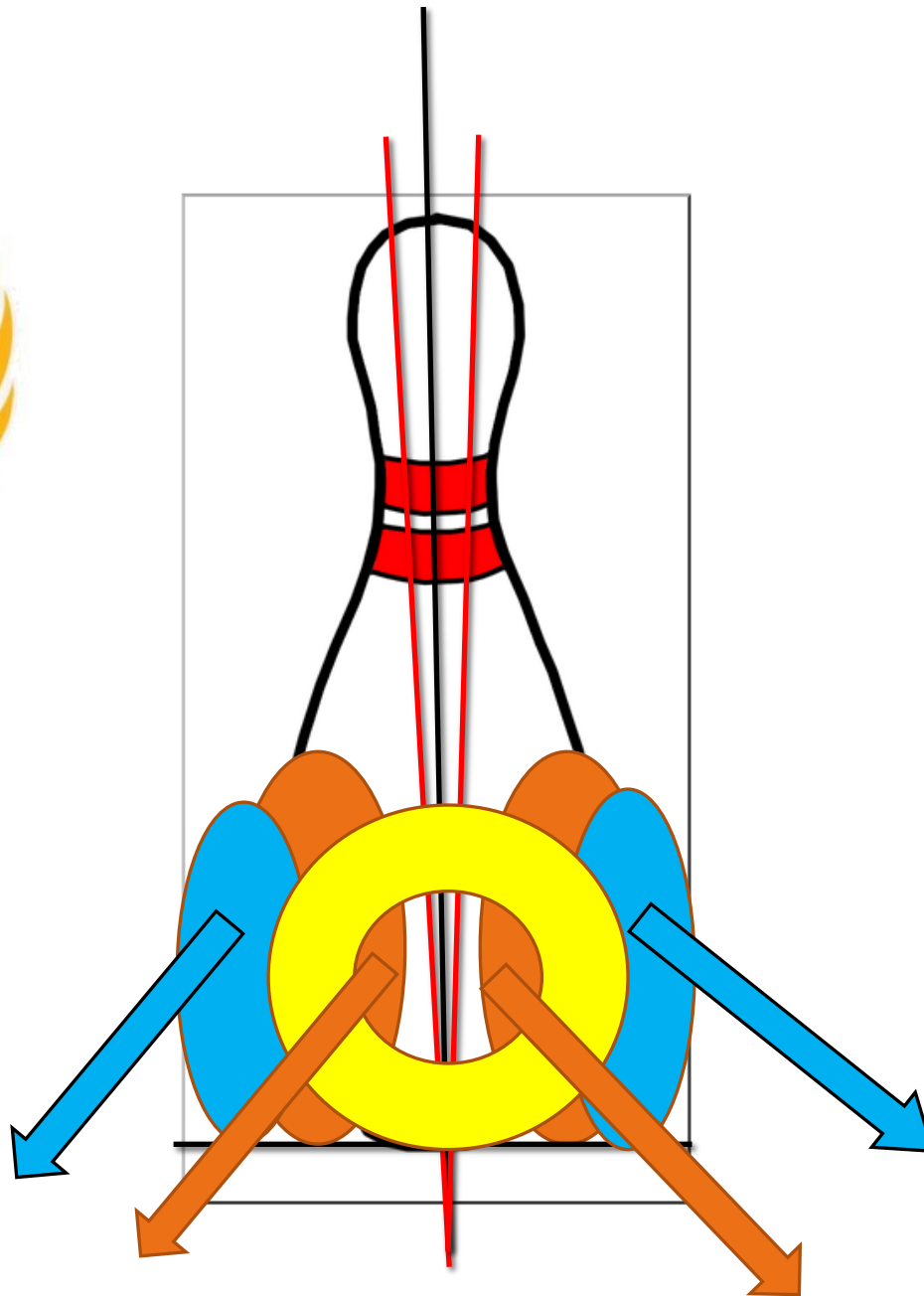
Bowlologist Accountability-Record Keeping

JOSH HYDE BOWLING LEDGER - Fiscal Year 2021						
MONTH	NEWSLETTER	Tournament Attendance-Pro/Amateur	TOURN. REPORT	PBA/PWBA PROJECT	BOWLOLOGY	AWARDS / HIGH GAMES /HIGH SERIES
JAN.	M, OTS, BC, BOL, OFC, POB, TFE			Pinnacle of Bowling	Bowlology Academy, Bowlology Form	3- 300's 3-800 with a 300 game. 7-games over 250.
FEB.	M, SPC, BC, OTS, OFC, POB			Pinnacle of Bowling	BOWLOLOGY FIRM 101	2-250 GAMES 2-700 SERIS
MAR	M,SPC,OTS,BOL,BC,POB,TFE			Pinnacle of Bowling	Bowlology Academy Guide, Ten in the Pit, SafeSport,	3 700's, 276 Game, 6 Games over 250
APR.	M,SPC, POB,				Spare Strike Seminar	226 Triplicate, 700 series with a 266 game.
MAY	M, SPC, POB,				Bowlology Academy on website, King Pin Associate 900 Course	
JUN.	M, SPC, BOL, OTS, ITP,					
JUL.						
AUG.						
SEPT.						
OCT.						
NOV.						
DEC.						

This is an example of a Bowlology ledger that I introduced in 2016. I currently send a semiannual report to six Strikeholders, including Parker Bohn III, Gianmarc Manzione (Editor of Bowlers Journal International) and Chad Murphy (USBC Executive Director). The reason for creating a ledger is for a Bowlologist to have a businesslike accountability system on what the sport of bowling is doing on a national and local level and to mark the Bowlologists' achievements in their personal bowling game.

Bowlologist Resumé





Single Pin Spare Analysis

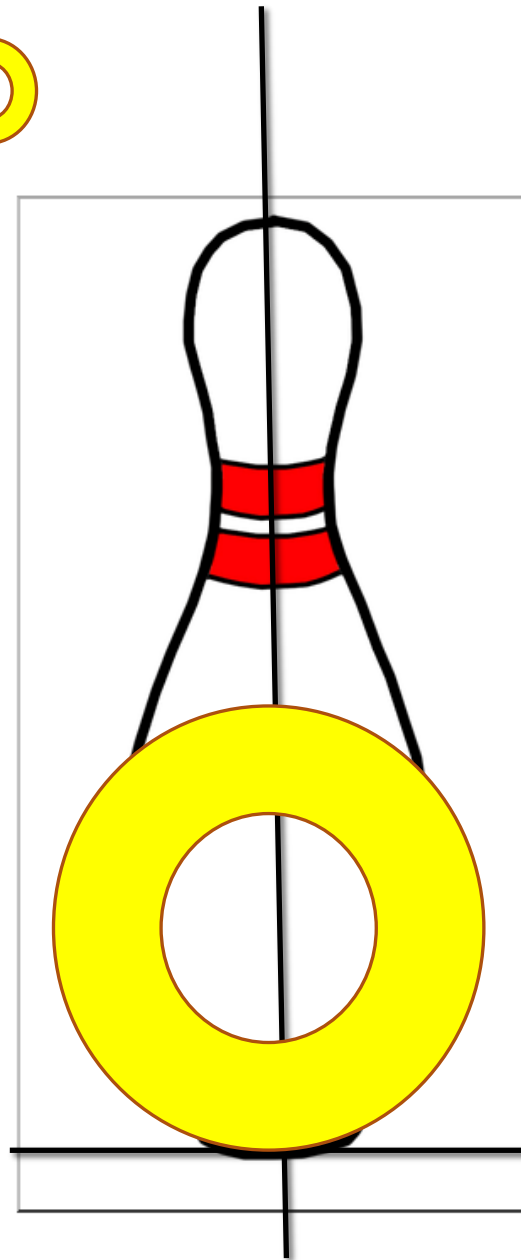
Yellow Dead-On Ball Impact Zone



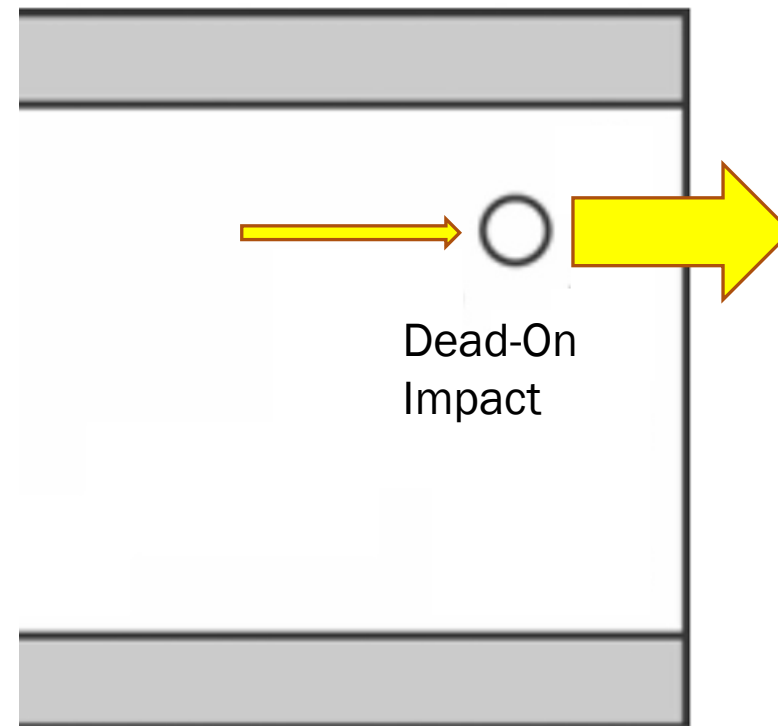
This diagram represents dead-on impact of a bowling ball to a single pin spare situation. A bowler cannot rely on pin action during a single pin spare.

The Dead-on impact is the absolute way to guarantee a clean frame.

Coaches recommend that bowlers use a plastic ball. The combination of the ball type and the dead-on impact eliminate the lane conditions and has little to no hook.



The ball delivers a large amount of energy to the pin. Both are cleared to the pin curtain in a strait line. There is a 0 degree difference between the ball and the pin. All 8 ½ inch width of the ball completely covers the width of the pin





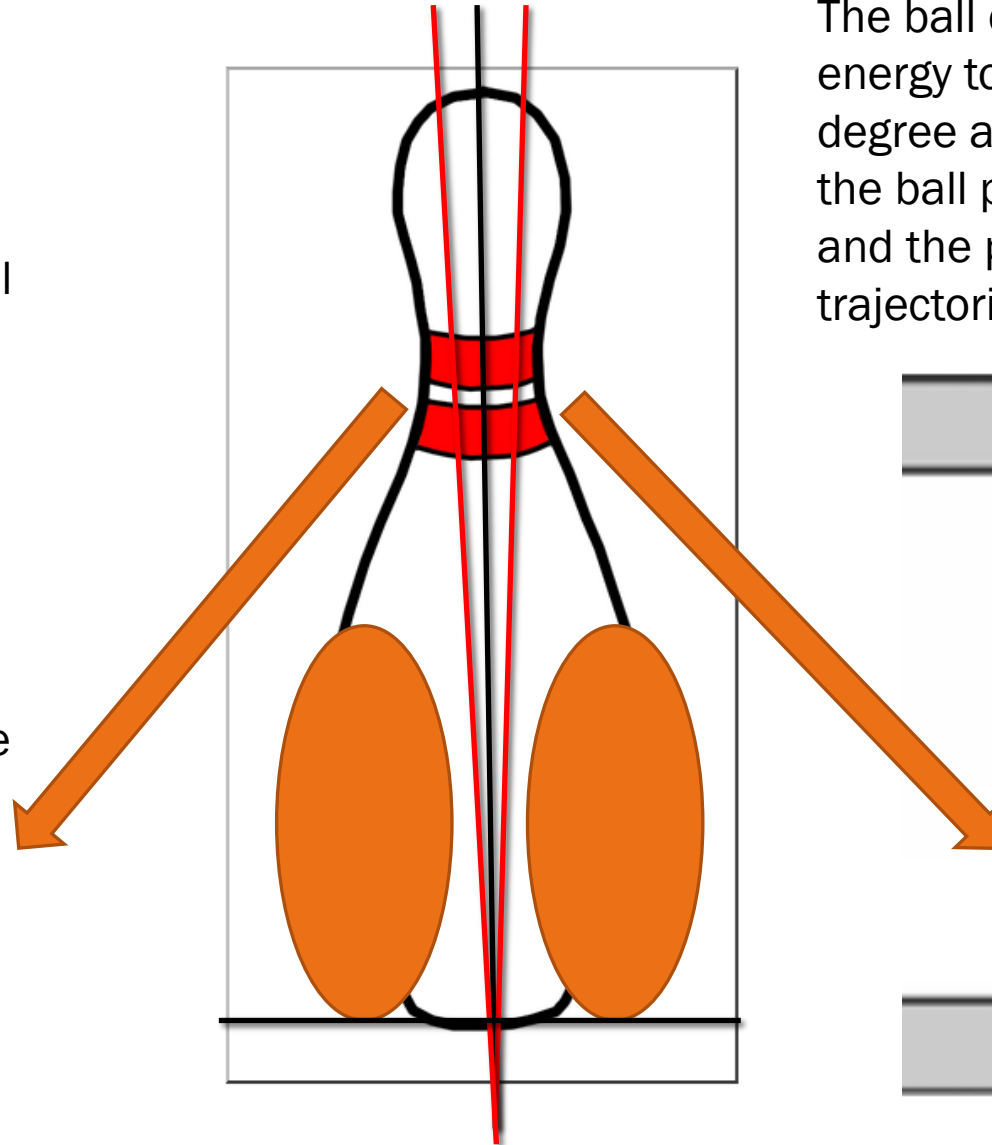
Orange Clipping Impact Zone

This diagram represents a Clipping impact of a bowling ball to a single pin spare situation.

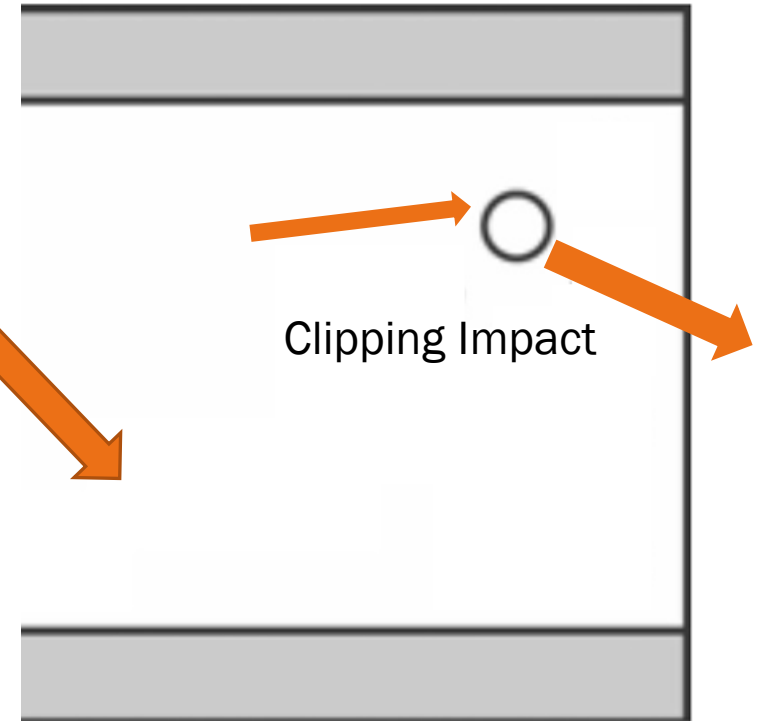
This will probably result in a spare if enough energy can be delivered to the pin.

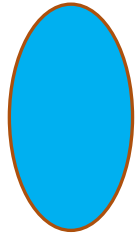
Since it clipping impact, the weight and speed of the ball are a factor in how much energy is delivered to the pin. It needs to be enough to make the pin tilt at least 8 degrees. A speed-dominate bowler can increase their margin of error.

8 degrees of tilt to get the pin to fall over



The ball delivers a partial amount of energy to the pin. The impact at a 45-degree angle overlaps with 2 inches of the ball part to the pin. Both the ball and the pin are redirected at different trajectories.



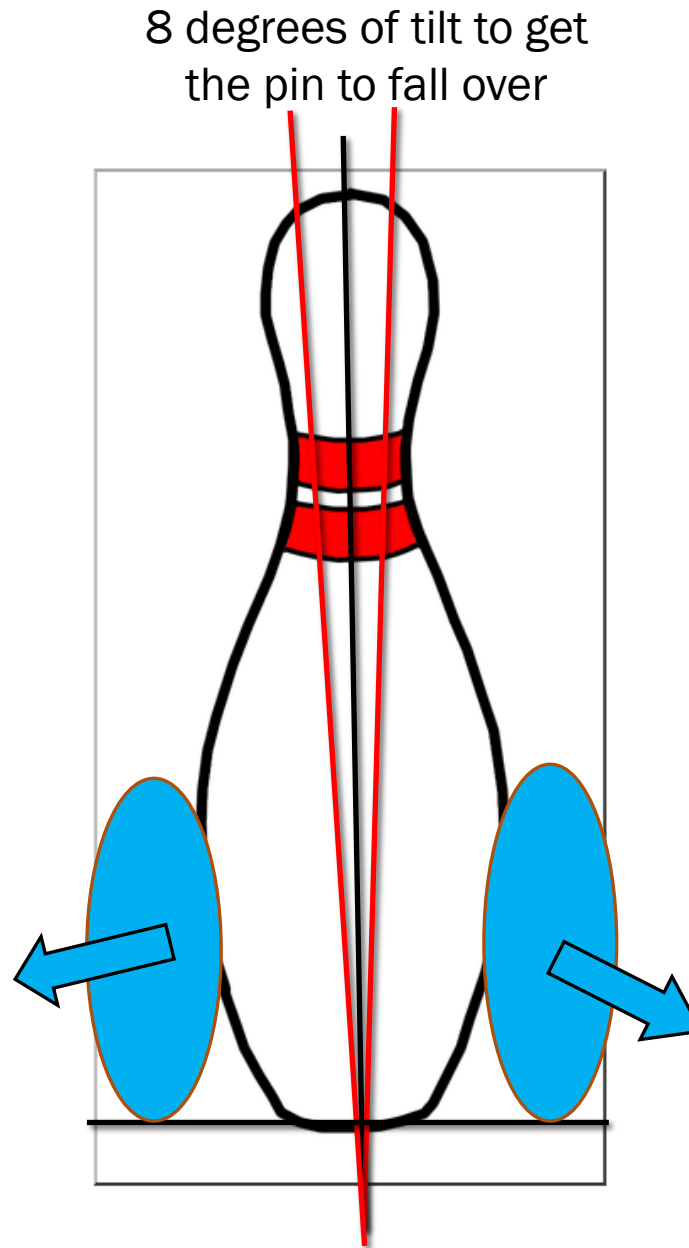


Blue-Grazing Impact Zone

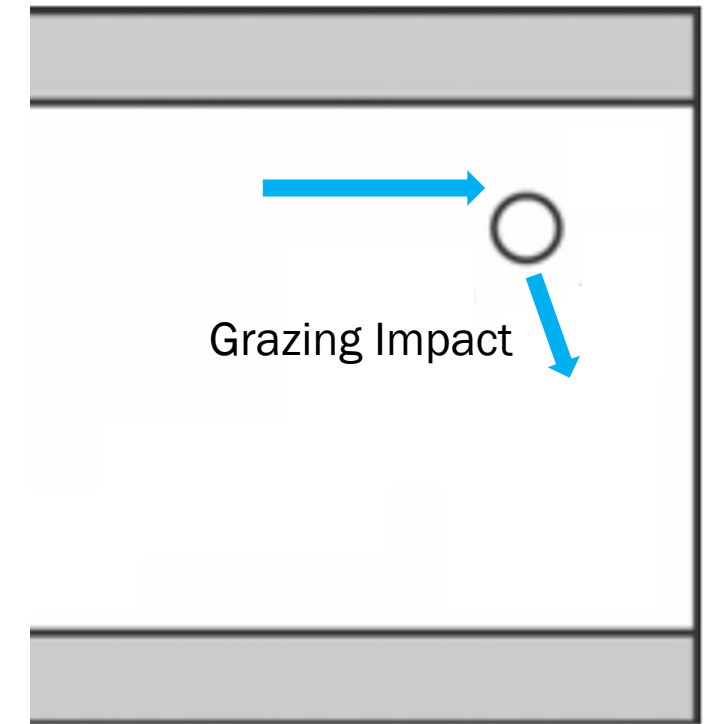
This diagram represents a Grazing impact of a bowling ball to a single pin spare situation.

This might result in a spare if enough energy can be delivered to the pin. This kind of impact makes the bowler sweat a little.

If the ball is moving fast, the pin will shoot across the lane at an angle. This is how a bowler can make a split, but it requires accuracy and power.



If the ball delivers a small amount of energy to the pin, the impact at a 75-degree angle overlaps with 1/2 inch of the ball part to the pin. The ball is slightly re-directed and the pin moves at a sharper angle.



PBA Hall of Fame

Established in 1975



Hall of Fame Criteria

- Hall of Fame Performance Category Eligibility

A bowler must have either won a minimum of 10 PBA Tour titles, or won a minimum of five PBA Tour titles, including two majors, and have been a PBA Member for at least 20 years.

- Criteria for PBA50 Performance Category Eligibility

A bowler must have won a minimum of eight PBA50 Tour Title or won a minimum of five PBA50 Tour titles including two majors and have been a PBA member for 10 years.

- Criteria for Meritorious Service Category Consideration

This category recognizes the exceptional efforts of individuals who advanced the PBA as organization. Those enshrined are individuals who have demonstrated both service and devotion and have made contributions above and beyond the ordinary to the sport of professional bowling over an extended period of years.

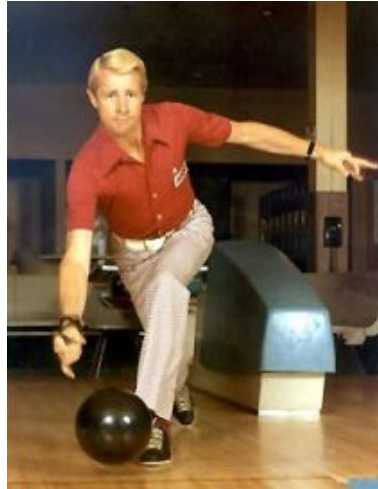
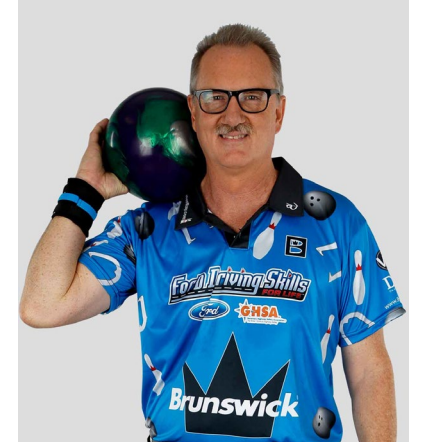
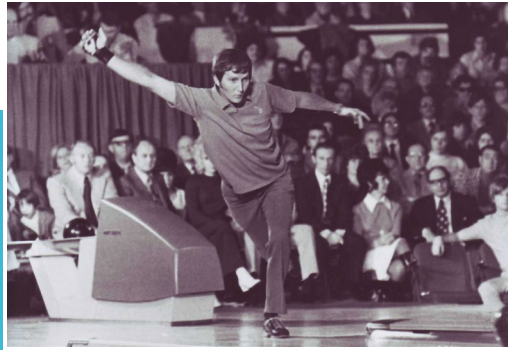
The PBA founded the PBA Hall of Fame in 1975



The 1975 Hall of Fame class included Ray Bluth, Don Carter, Carmen Salvino, Harry Smith, Dick Weber, Billy Welu, Frank Esposito, and Chuck Pezzano

Elite Bowlers:

Don Johnson
Mike Aulby
Pete Weber
Walter Ray Williams Jr.
Dick Weber
Norm Duke
Marshall Holman
Parker Bohn
Mark Roth
Earl Anthony



These were the Top Ten greatest bowlers of all-time in PBA history.

PBA Leaders (Meritorious Service):

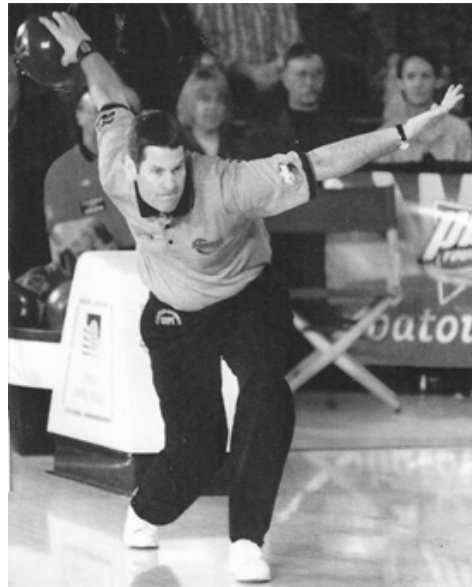
Eddie Elias
Chris Schenkel
Harry Golden
Chuck Pezzano
Frank Esposito
Larry Lichstein



These individuals helped
shape the PBA.

Major Contenders

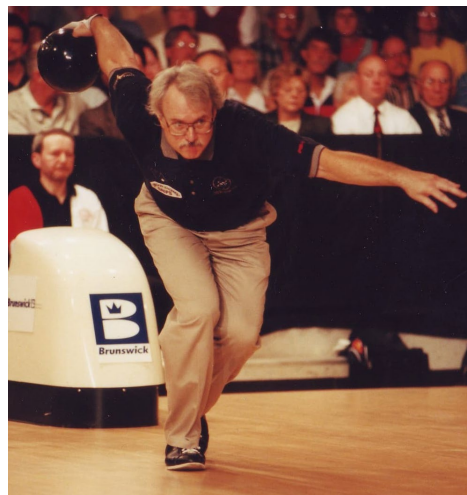
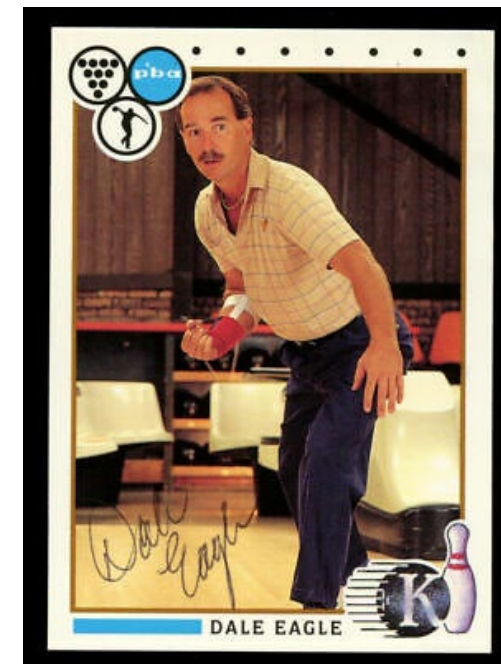
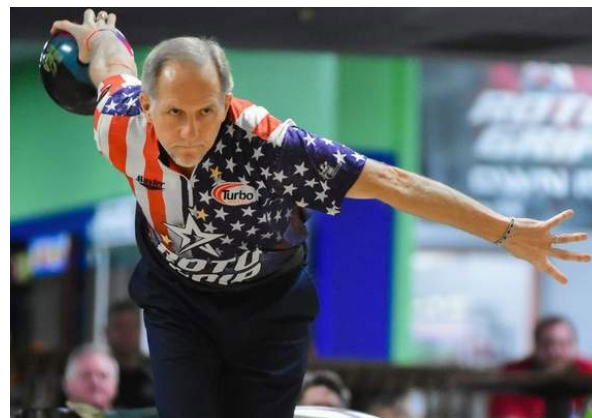
Billy Hardwick
Mike Durbin
Jason Couch
Dave Husted
Don Carter



These bowlers were
great at winning the
most difficult
PBA Tournaments.

PBA50 (formerly known as the Senior Tour)

John Handegard
Ron Mohr
Dale Eagle
Bob Glass
Teata Semiz
Gene Stus
Pete Couture



These bowlers
had full-time jobs
prior to joining the
PBA50 Tour.



Perfect Games on Television

Steve Hoskins
Mika Koivuniemi
Tommy Jones
Johnny Pedraglia
John Guenther

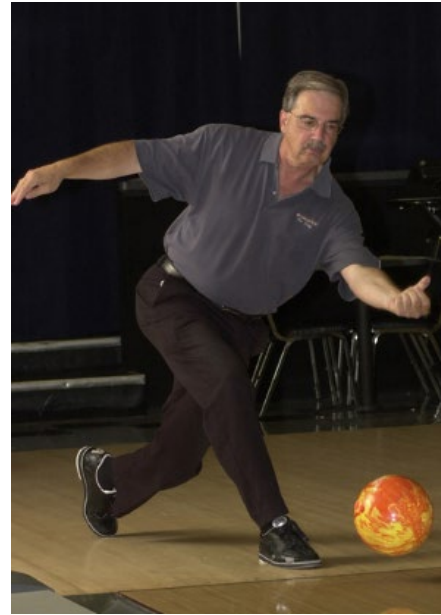
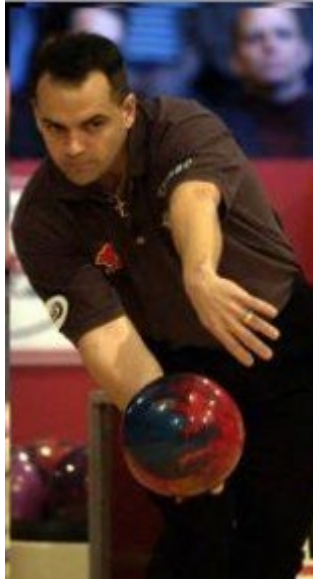


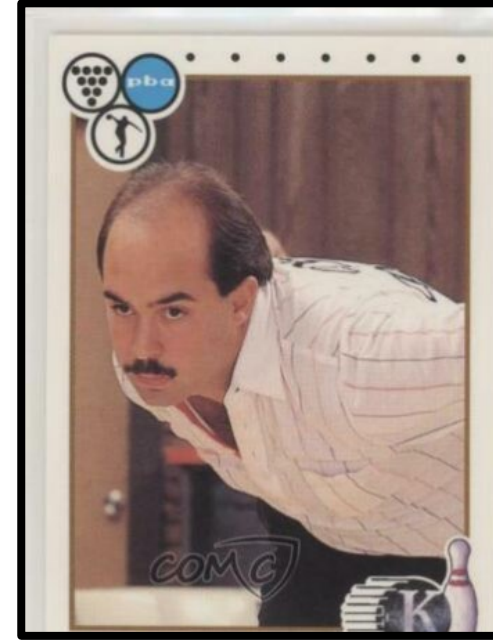
PHOTO: PBA LLC



These bowlers
shot a perfect
game on national
television.

Three Different Majors without A Triple Crown

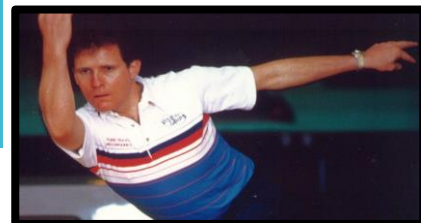
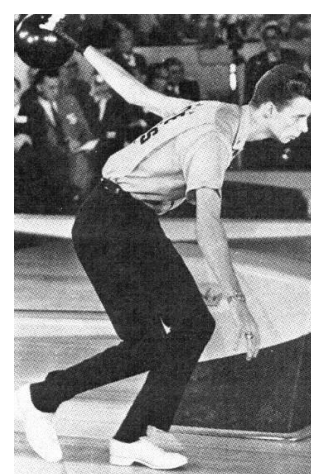
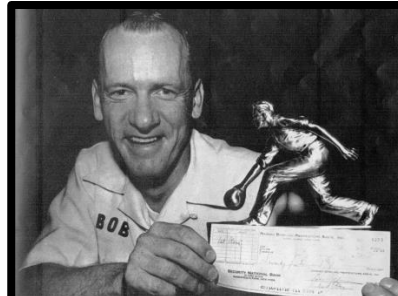
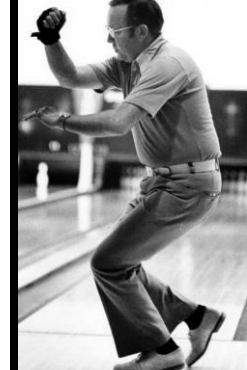
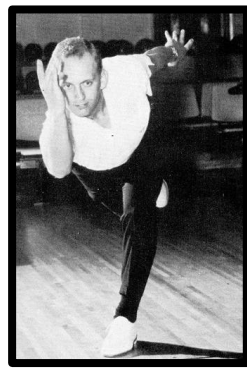
Steve Cook
Del Ballard, Jr
Joe Beradi



These bowlers
have won three
different Majors
without having an
honor such as the
Triple Crown.

Player of the Year

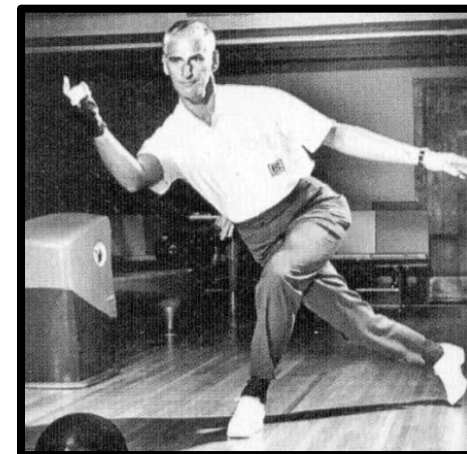
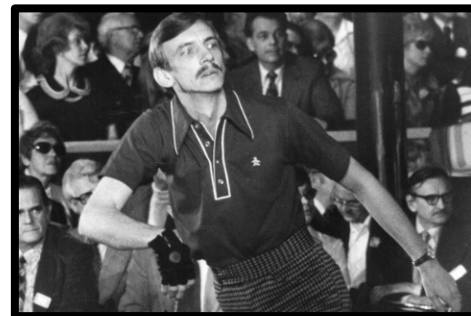
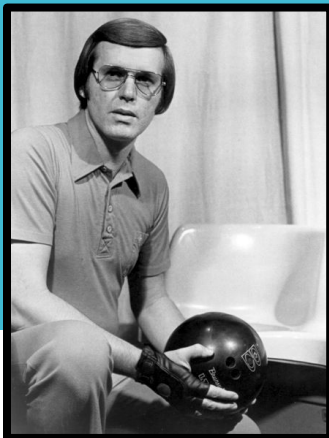
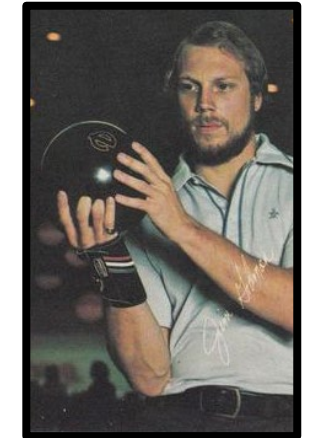
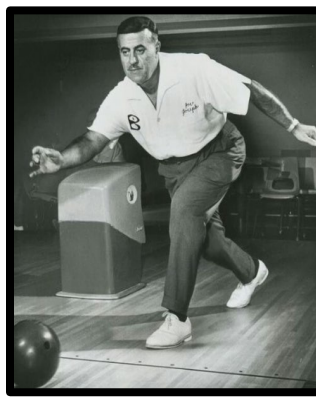
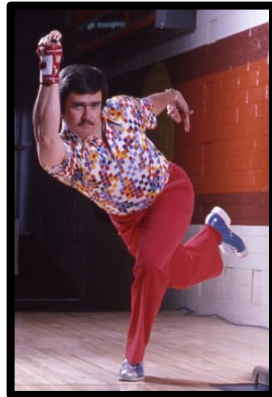
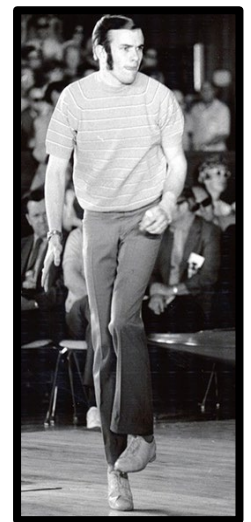
Wayne Zahn
Patrick Allen
Doug Kent
Amelto Monacelli
Don McCune
Wayne Webb
Bob Strampe
Dave Ferraro
Jim Stefanich
Wes Malott
David Ozio
Nelson Burton, Jr
Dave Davis
Brian Voss
Chris Barnes



These bowlers have won the Player of the Year Award.

PBA Greats

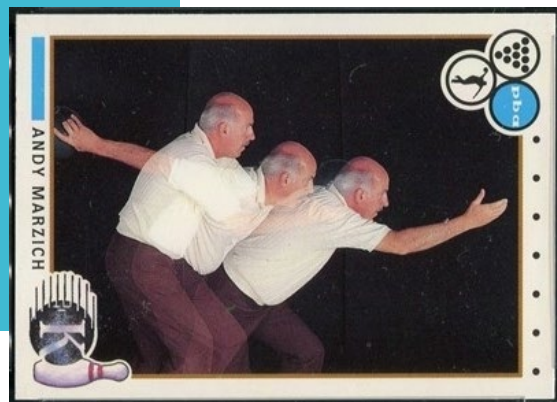
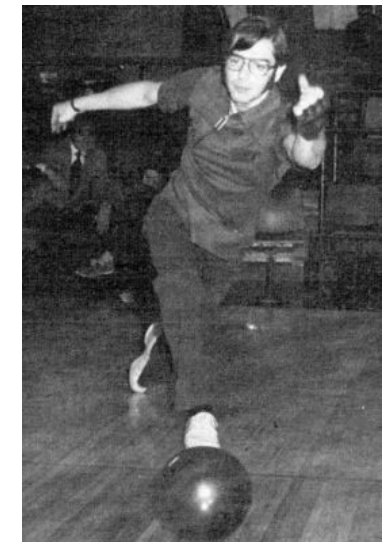
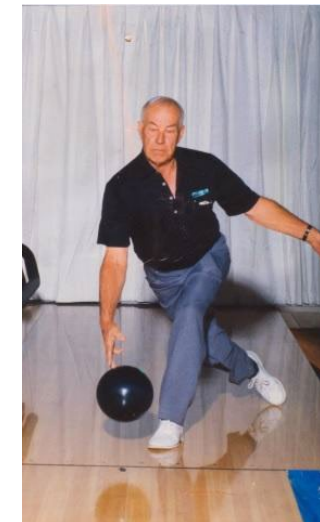
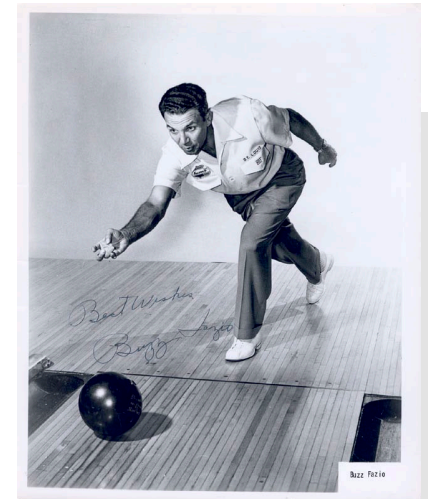
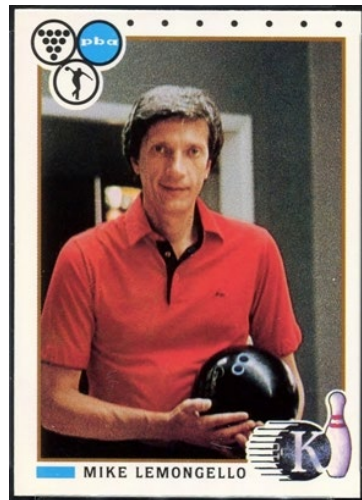
Danny Wiseman
Mike Scroggins
Bill Allen
Mike McCraft
Paul Colwell
Joe Joseph
Gary Dickenson
Tom Baker
Mark Williams
Roy Buckley
Jim St. John
Jim Godman
Tommy Hudson
Dave Soutar
Larry Laub
George Pappas



These bowlers
have excelled in
their own way.

PBA Pinnacle of Bowling

Mike Lemongello
Randy Pedersen
Barry Asher
Buzz Fazio
Ernie Schlegel
Bryan Gobel
Glenn "Mr. 900" Allison
Skee Foremsky
Andy Marzich
Dick Ritger



These bowlers have excelled in their own way.

Greatest Moments in Bowling History





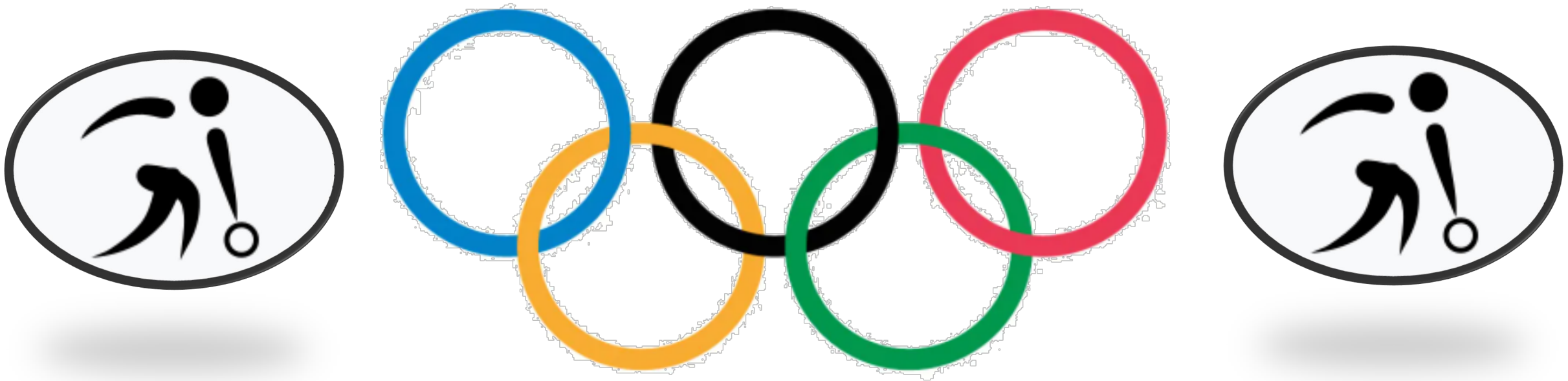
1895 - The ABC was founded, currently known as the USBC.

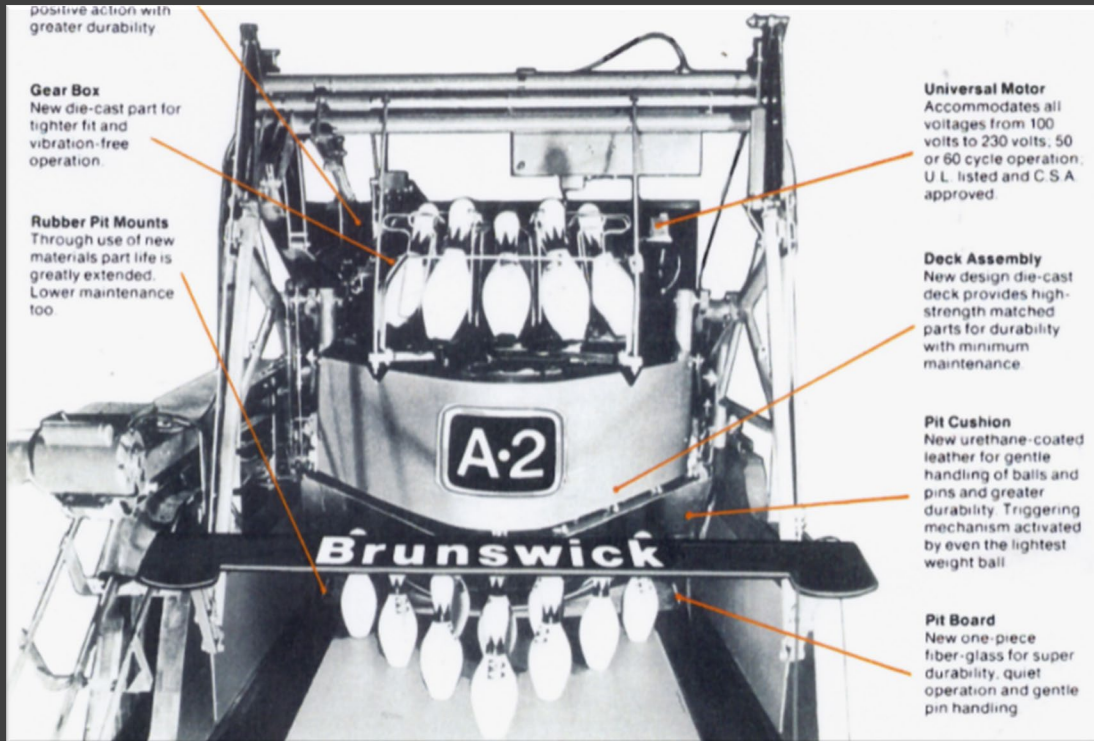
- Prior to 1895 bowlers did not have standard bowling practices across the US. Bowlers might have bowled in New York on a 60-foot lane. However, when they arrived in Chicago the lanes were only 30 feet long. In 1895 bowlers formed the American Bowling Congress, currently known as the United States Bowling Congress. The American Bowling Congress produced uniform standards for bowling ball size, lane length, and tournament rules.
- The first national tournament for the American Bowling Congress occurred January 8-11, 1901, in Chicago, Illinois with competition between teams, doubles, and singles on six lanes.
- Frank Brill was named the first Individual Champion. The two-man team championship was won by J. Voorhies and C.K. Starr. The five-man team championship was won by the Standard team of Chicago.



1932 Bowling was an exhibition sport in the Olympics.

In 1932 Bowling was on world stage at the 1932 Summer Olympics. It was an exhibition sport. Today decades later bowling is still recognized as an Olympic sport. There have been modifications to the scoring system for the non-bowling fans to understand who is the lead after every frame. Hopefully, the Olympic committee will recognize bowling as an Olympic Sport. A multitude of bowling experts think bowling needs to be recognized as an Olympic sport to finally get respect as an equal to other sports that are challenging to athletes.

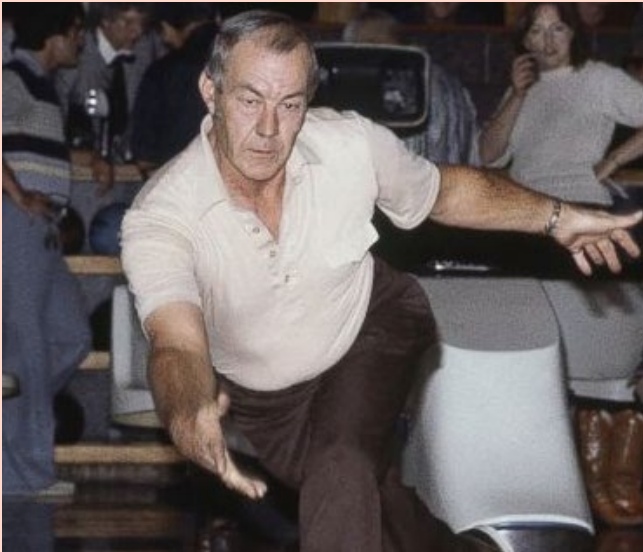




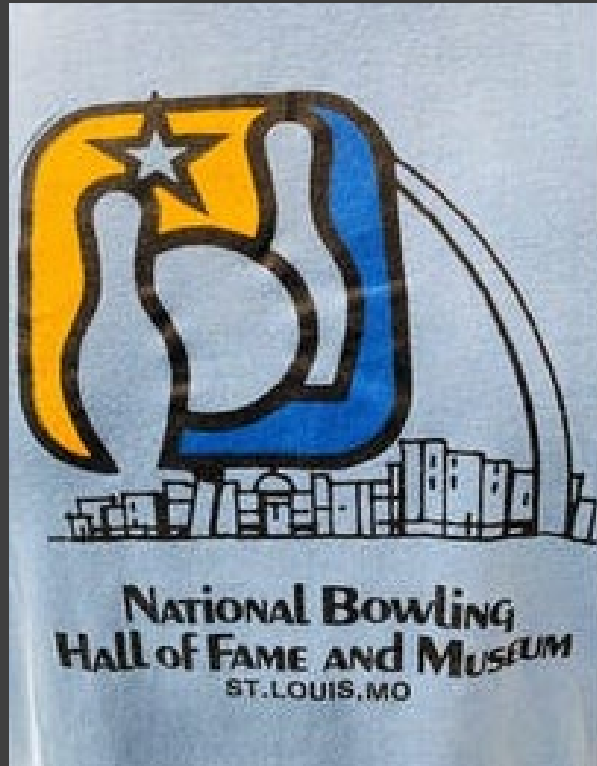
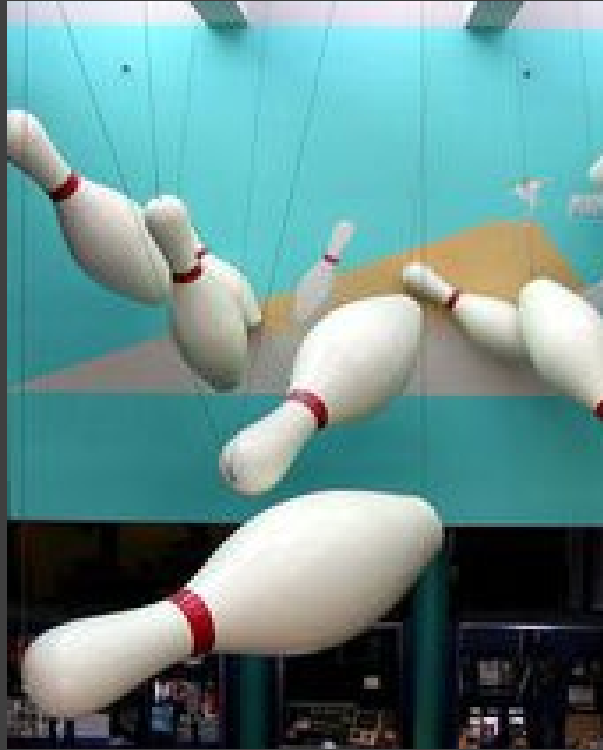
Automatic Pin Setter

In 1936 AMF designed the first mechanical pin setter. This would revolutionize the sport of bowling. Proprietors would not have to hire pin boys to setup the pins at the end of the lanes. Automatic pinsetter machines would start rolling into bowling centers in the 1950's further popularizing the sport by creating a more efficient pin setting process and ball return. The introduction of automatic scoring in the 1970's opened the sport to all bowlers of any skill level making it a true American past time from the average weekend bowlers to the serious tournament bowler.

1982 Glenn Allison shoots the first 900 series.



Glen Allison is the first one to shoot a 900 series back in 1982. When the ABC first tested the lanes, they said that the lanes were not legal to their standards at the time in 1982 and therefore would not sanction his 900 score into the record books. There were no 900's until almost 15 years later. After receiving multiple petitions, the USBC said that they could not recognize his 900 score officially, but stated they had the "highest respect and admiration" for Glen's achievement. They felt the rules from 1982 could not be changed as it could potentially open up multiple lawsuits and disputes over the scores that were disregarded over the years. They felt it was best to "close this chapter and move forward." Glen's 900 score is known as the True 900 due to the conditions of the lanes and balls of that era. He received a 900 ring from his bowling center.



1984 The Bowling Hall of Fame was opened.

In 1984 the bowling industry decided there needed to be a place to showcase the bowling history and the greatest bowlers of all times. Bowlers like Dick Weber, Earl Anthony, and Don Carter were the legends of the game. There was a chance for bowlers and bowling fans to bowl on the old lanes and on the modern lanes. Just like the Bowler's Journal is the oldest publication in the bowling industry, the Bowling Hall of Fame is the third oldest sports museum created in 1931. This Bowling Hall of Fame has a multitude of awards and plaques recognizing the highest achievement in modern bowling. Back then the ABC and the WIBC were two entities before merging in 2005 into the USBC.

1995 The National Bowling Stadium opened.

In 1995 the National Bowling Stadium would open by hosting its first event, the USBC Open Championships. The USBC ruled that every three years the Championship would be contested at the National Bowling Stadium. It was featured in a major Hollywood motion picture *KingPin* and included some of the top bowlers from the Brunswick pro staff such Mark Roth, Parker Bohn III and Randy Pedersen.





Ex-Microsoft Executives purchase the PBA

In 2000, Rob Glaser, Mike Slade, and Chris Peters purchased the PBA for \$5 million. The story was featured on the front page of the Wall Street Journal. Chris retired from Microsoft and wanted to pursue his bowling passion instead. He found Rob and Mike who were willing to take on the challenge of running the PBA.



2010 Kelly Kulick wins at the Tournament of Champions

At the 2010 Tournament of Champions, Kelly Kulick became the first woman to win a PBA Title and a Major Title at the same tournament. She qualified second for the step-ladder Championship round. She defeated Mika Koivuniemi in a close match 227-223, before moving on to face Chris Barnes. She easily defeated Chris 265-195 in the Championship match. Four years earlier, she was the first woman to become exempt on the PBA Tour.



L to R Tom Clark, Anthony Simonsen, Chad Murphy

Anthony Simonsen becomes the youngest to win a Major.

At the 2016 USBC Masters the youngest bowler to win a PBA Title would claim the championship by defeating Dan MacLelland 245 to 207.



Greatest Moments in Bowling History

Greatest Moments in Bowling History.

These moments in modern bowling history made the sport what is in the 21st Century for bowlers across America and the world.

Here is an opportunity for bowling fans to test their knowledge of modern bowling history with a score of 80%.

Bowling fans will have a chance to get a discount to the International Bowling Hall of Fame & Museum by passing this quiz. Good luck and it was an honor to present the greatest moments in bowling history.

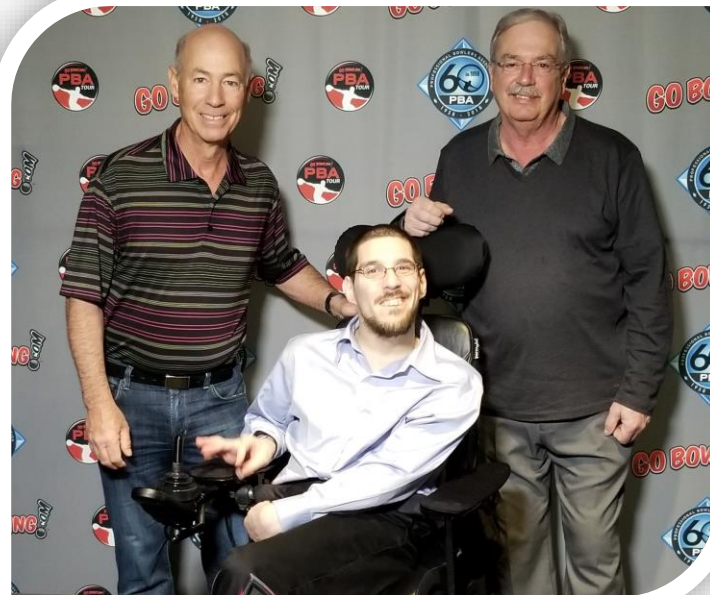
1. In what year was the American Bowling Congress founded?
2. What is the oldest bowling publication still in operation?
3. Who was the first bowler in history to shoot a 900 series?
4. In 1932, bowling was introduced as an exhibition sport in what well-known event?
5. In 1936, what did AMF invent that would revolutionize the sport of bowling and expand the industry?
6. In 1984, what famous city in America was the International Bowling Museum opened in?
7. In 1995, what significant institution was built in Reno, Nevada?
8. Who financially turned the PBA around in 2000?
9. Why was the winner of the 2010 Tournament of Champions a significant milestone?
10. What tournament did the youngest bowler win at a Major?



BOWLOLOGY PRESENTS

PINNACLE OF BOWLING- THE PBA





Delirious Love: Josh Hyde, a victim of cerebral palsy, is deliriously in love with pro bowling. He became an honorary PBA member in 2001. (With Tom Smallwood, Eugene McCune, Ronnie Russell and Pete Weber, l-r)





PINNACLE OF BOWLING-PBA EST. 1958

- **50 GREATEST PBA BOWLERS (2009) –#5- MARK ROTH**
 - **IN 1978 HE WOULD WIN 8 TITLES IN A SINGLE SEASON. HE WOULD BE ONE OF THE MODERN POWER BOWLERS.**
- **PBA 60 GREATEST BOWLERS (2018) -#5 PETE WEBER WINS HIS FIFTH U.S OPEN BY STRIKING ON THE FINAL BALL.**
 - **PETE WEBER WOULD TIE HIS LEGENDARY FATHER DICK WEBER & DON CARTER WITH FOUR US OPEN TITLES**
 - **IN 2012 HE WOULD ECLIPSE THAT BY STRIKING ON THE FINAL BALL TO WIN BY ONE PIN OVER MIKE FAGAN 215 TO 214.**

PINNACLE OF BOWLING-PBA EST. 1958

- **50 GREATEST BOWLERS- #4 PETE WEBER**

- **HAS WON THE MOST MAJORS AND COMPLETING THE TRIPLE CROWN TWICE IN 2013. WHEN HE WON THE TOURNAMENT OF CHAMPIONS. HE IS THE ONLY PLAYER TO WIN TEN TITLES WITH DIFFERENT COVERSTOCKS OF BOWLING BALLS**

- **60 GREATEST MOMENTS #4 PETE MCCORDIC BOWLS A PERFECT GAME ON NATIONAL TV.**

- **IT HAS BEEN 13 YEARS SINCE A BOWLER BOWLED A 300 ON NATIONAL TV IN THE OPENING MATCH OF THE GREATER LOS ANGELES OPEN. PETE MCCORDIC WOULD ADDITIONALLY EARN A \$100,000 FOR THE PERFECT GAME.**

PINNACLE OF BOWLING-PBA EST. 1958

- **50 GREATEST PLAYERS- # 3 DICK WEBER**

- **DICK WEBER WAS THE FIRST PLAYER TO WIN PBA TITLES IN 5 DIFFERENT DECADES. HE WOULD ALSO DOMINATE IN THE EARLY YEARS OF THE PBA. HE WAS THE FIRST OF THE PBA'S SUPER STAR TO WIN TEN TITLES. IN ONE OF THE FIRST PBA HALL OF FAMES MEMBERS AND A CHARTER MEMBER OF THE PBA.**

- **60 GREATEST MOMENTS-#3 KELLY KULICK BECOMES THE FIRST WOMAN TO WIN A NATIONAL PBA TOUR TITLE AT THE TOC.**

- **IN 2010 KELLY KULICK WOULD WIN THE TOURNAMENT OF CHAMPIONS BY DEFEATING CHRIS BARNES 265 TO 195. SHE WON THE PWBA NATIONAL CHAMPIONSHIP IN 2009. THIS WOULD GIVE HER THE OPPORTUNITY TO COMPETE IN THE TOURNAMENT OF CHAMPIONS. HER MINDSET WAS SHE HAD NOTHING TO LOSE AND EVERYTHING TO GAIN.**

PINNACLE OF BOWLING-PBA EST. 1958

- **50 GREATEST PLAYERS-# 2 WALTER RAY WILLIAMS JR**

- **WALTER RAY WILLIAMS JR HAS OVER A 100 COMBINED PBA TOUR TITLES. HE IS ONLY THE PLAYER TO WIN MULTIPLE PLAYER OF THE YEAR HONORS. IN ALL COMPLETIONS OF THE PBA. HE HAS ALSO THE ONLY PLAYER TO WIN PLAYER OF THE YEAR IN THREE DIFFERENT DECADES. EVEN THOUGH HE IS SECOND ON THE 50TH GREATEST PBA LIST. HE IS THE GREATEST OF ALL TIME.**

- **60 GREATEST MOMENTS-# EDDIE ELLIAS FOUNDED THE PBA**

- **IN 1958 AT THE USBC MASTERS TOURNAMENT EDDIE ELIAS A FORMER AKRON ATTORNEY WAS HOLDING A MEETING WITH 33 PBA CHARTER MEMBERS SOME OF THE MEMBERS THERE WERE IN AN ATTENDANCE WERE DICK WEBER, CARMEN SALVINO, AND DON CARTER. ALL 33 MEMBERS WOULD PUT \$50.00 UP AS SEED MONEY .**

PINNACLE OF BOWLING-PBA EST. 1958

- **50 GREATEST PLAYERS- #1 -EARL ANTHONY WOULD BE VOTED THE GREATEST PLAYER OF ALL TIME IN THE HISTORY OF THE PBA.**
 - **HE WOULD WIN 43 TITLES. HE WOULD ALSO BECOME THE FIRST BOWLER TO WIN A \$100,000 IN A SINGLE SEASON AND THE FIRST BOWLER TO WIN A \$1,000,000 IN CAREER EARNINGS.**
- **60 GREATEST MOMENTS-#1 DON JOHNSON'S 299 AT THE 1970 FIRESTONE TOURNAMENT OF CHAMPIONS**
 - **DON JOHNSON FINALLY BROKE THROUGH IN HIS FIFTH CONSECUTIVE CHAMPIONSHIP ROUND. DICK RITGER AND DON JOHNSON WOULD START OFF THE MATCH WITH THE FRONT EIGHT STRIKES. UNFORTUNATELY RITGER STOPPED IN THE NINTH FRAME. HOWEVER DON KEPT ON GOING BEFORE LEAVING A TEN PIN ON THE FINAL SHOT. COSTING HIM A \$10,000 BONUS. FOR SHOOTING A \$300 GAME ON NATIONAL TELEVISION.**

PINNACLE OF BOWLING-PBA EST. 1958

THE PINNACLE OF BOWLING IS THE PBA. EARL ANTHONY, DICK WEBER, DON CARTER, WALTER RAY WILLIAMS, JR., PETE WEBER, JASON BELMONTE, AND EJ TACKETT ARE THE ELITE GROUP OF THE GREATEST PLAYERS IN THE HISTORY OF THE PBA. ALONG WITH MANY OTHERS THE PBA HAS FIVE MAJORS TOURNAMENTS. THESE TOURNAMENTS ARE AS FOLLOWS. THE PBA WORLD CHAMPIONSHIP THE U.S. OPEN, THE TOURNAMENT OF CHAMPIONS, THE USBC MASTERS, AND THE PBA PLAYERS CHAMPIONSHIP, NORM DUKE, JOHNNY PETRAGLIA, BILLY HARDWICK, CHRIS BARNES, PETE WEBER, MIKE AULBY ARE THE ONLY PLAYERS TO COMPLETE THE TRIPLE CROWN. IN 2013 PETE WEBER BECAME THE FIRST BOWLER TO COMPLETE THE TRIPLE CROWN TWICE WHEN HE WON THE TOURNAMENT OF CHAMPIONS. THESE FIVE MAJORS ARE DIFFICULT TO SCORE ON BECAUSE OF THE CHALLENGING LANE CONDITIONS THAT HAVE LESS MARGIN OF ERROR THAN A NORMAL PBA TOURNAMENT. IN 2008 THE PBA CELEBRATED 50 YEARS OF THE PBA. EARL ANTHONY WAS VOTED THE GREATEST BOWLER IN THE HISTORY OF THE PBA. TEN YEARS LATER FOR THE 60TH ANNIVERSARY THE PBA WOULD COME UP WITH 60 GREATEST MOMENTS IN PBA HISTORY. DON JOHNSON WOULD HAVE THE ALL-TIME GREATEST MOMENTS IN THE 1970 TOURNAMENT OF CHAMPIONS BY SHOOTING A 299 IN THE CHAMPIONSHIP GAME. IN 1975 THE PBA WOULD HAVE THE INAUGURAL PBA HALL OF FAME. DICK WEBER, DON CARTER, AND CARMEN SALVINO WOULD BE THE FIRST PBA HALL OF FAMERS TO GET INDUCTED INTO THE HALL OF FAME.

CHRIS SCHENKEL, EDDIE ELIAS, AND DICK WEBER WERE THE FOREFATHERS AT THE PBA FOUNDING.

PINNACLE OF BOWLING-PBA EST. 1958

- **MAJOR ATTENDANCE RECORD-**

- **U.S OPEN- 90/91/93/94/95/96/2010**
- **PBA NATIONAL/WORLD CHAMPIONSHIP- 92/95/96/97/99/02/06/07/08**
- **PBA PLAYERS-92/93/94/98/99/2000/2015**
- **MASTERS-2007**
- **TOC- 2000/2013/2015**

- **PBA HALL OF FAME CEREMONY-**

- **2000/2013/2018**

PINNACLE OF BOWLING-PBA EST. 1958

- **IN 2001 I BECAME AN HONORARY MEMBER OF THE PBA. I WAS AT THAT 2001 PBA NATIONAL CHAMPIONSHIP. I ASKED PBA PRESIDENT STEVE MILLER HOW I COULD OBTAIN PBA MEMBERSHIP. HE SAID WHY NOT. THE NEXT WEEK I RECEIVED MY PBA MEMBERSHIP CARD. HE WROTE A NOTE SAYING CONGRATULATIONS TO OUR NUMBER ONE FAN.**
- **IN 2014 I ASKED TO BE A MEMBER OF THE PBA HALL OF FAME COMMITTEE. I WAS ACCEPTED AS A FAME OF COMMITTEE MEMBER FOR THE SUPERIOR PERFORMANCE CATEGORY.**
- **USBC SILVER COACH-NOVEMBER 2019-BOWLOLOGIST BPL**

EVOLUTION OF THE BOWLING BALL

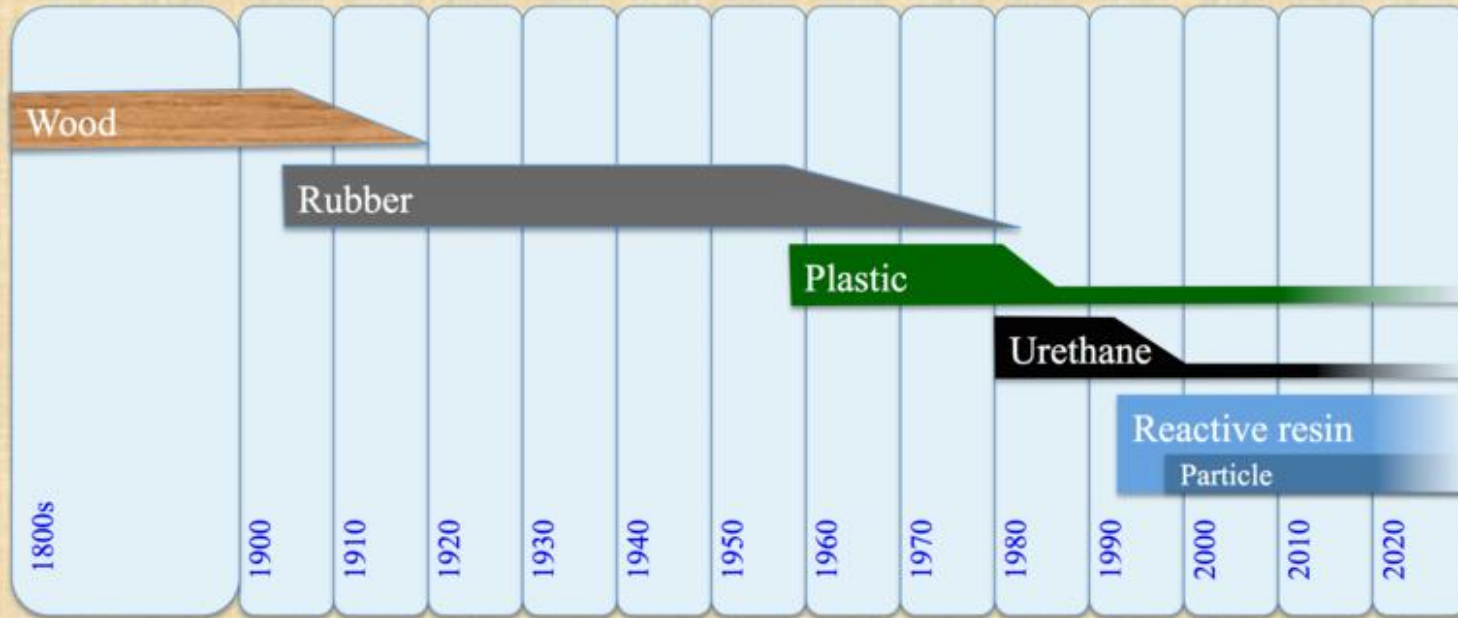
**IN THIS SEMINAR BOWLERS, COACHES AND PRO-SHOP OPERATORS
WILL BE INFORMED ON THE EVOLUTION OF THE BOWLING BALL**



THE BOWLING BALL HAS EVOLVED GREATLY IN THE LAST 30 YEARS. TODAY THERE IS A NEW BALL COMING OUT EVERY MONTH OR EVEN EVERY WEEK. BOWLERS MUST KNOW THEIR GAME TO GET THEIR MONEY'S WORTH OUT OF A BALL. THEREFORE, IT IS VERY IMPORTANT TO KNOW A GOOD PRO-SHOP OPERATOR THAT KNOWS THE BOWLER'S GAME. FIFTY YEARS AGO, BOWLERS HAD ONLY ONE OR TWO BALLS IN THEIR BAG. NOW TOURNAMENT BOWLERS WOULD HAVE A DOZEN OR TWO DOZEN BALLS. THIS SEMINAR DIVES INTO THE DIFFERENT TYPES OF BOWLING BALLS THAT ARE ON THE MARKET TODAY.



Cover-stock Evolution over the Decades



The cover-stock of a bowling ball is a key element to a bowler's game. This is the surface that is going to be in contact with the lane. Pro-Bowlers know when they need to use surface to get their ball to read the lanes. The cover-stock is the tire of the bowling ball. It can dictate how a bowler is performing. If they have the wrong surface the scores will plummet. However, if they have the right surface their scores will go up.

ABRALON PADS



A bowler can manipulate the ball by putting surface to the ball. These Abralon Pads are used to sand or polish the coverstock. The more abrasive pads have the lower number. A 360 pad could be used on a fresh oil lane. This will shorten the distance to the breakpoint. A 3000 pad will polish the ball and delay the breakpoint.

SURFACE MAINTENANCE

BOWLERS, PRO-SHOP OPERATORS AND COACHES NEED TO CREATE A GAME PLAN ON HOW THE BOWLER WANTS TO PERFORM IN LEAGUE OR TOURNAMENT PLAY. IN ORDER TO ACCOMPLISH THIS FEAT, ALL THREE PARTIES WOULD DECIDE ON WHAT BOWLING BALL SURFACES THEY NEED TO COMPETE IN LEAGUE OR TOURNAMENT PLAY. THE SURFACE OF THE BOWLING BALL IS THE MOST IMPORTANT THING SINCE THE BALL IS GOING TO BE TOUCHING THE SURFACE OF THE LANE. WHEN JOE BOWLER HAS A COACH AND A PRO-SHOP OPERATOR THEY MUST BE ON THE SAME PAGE.



At Left:
Example of a
sanded
bowling ball.

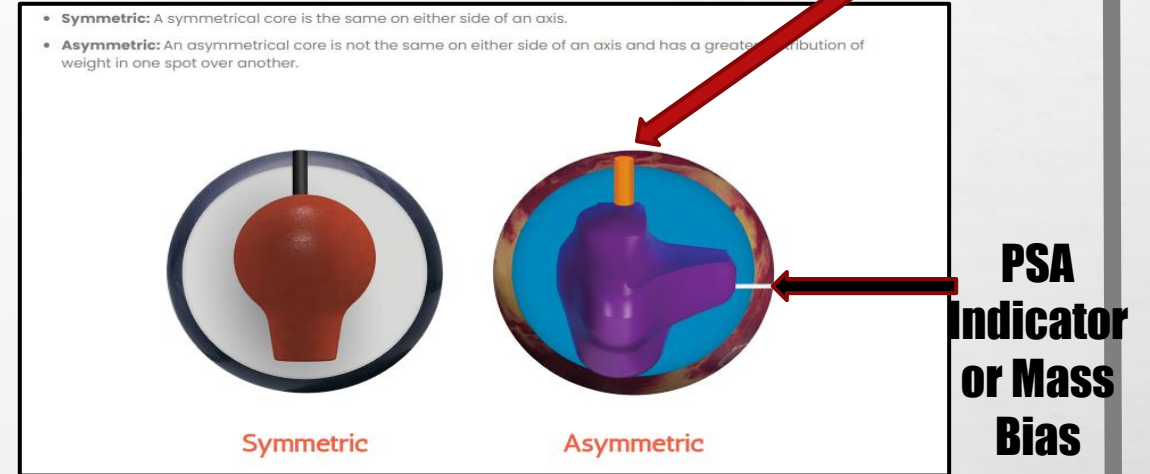
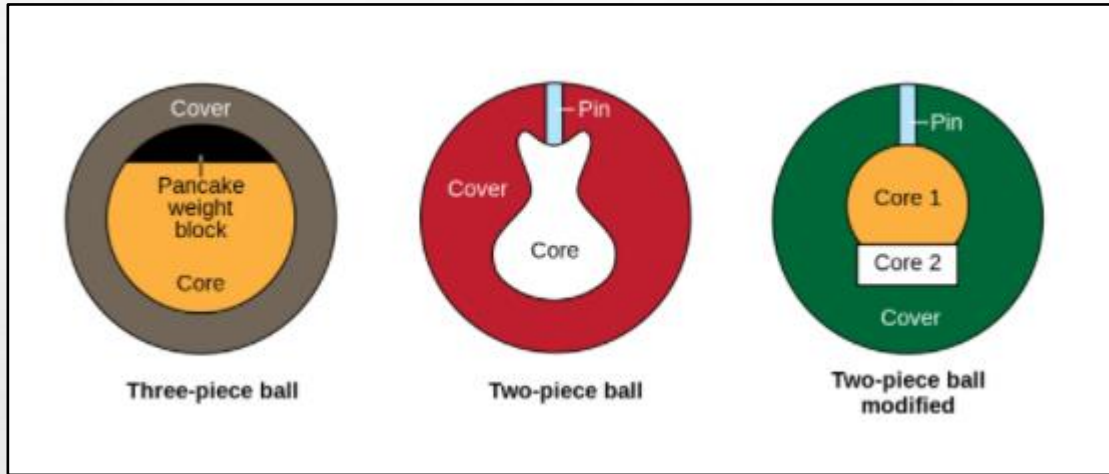


At Left:
Example of a
matte
bowling ball.



At Left:
Example of a
polished
bowling ball.

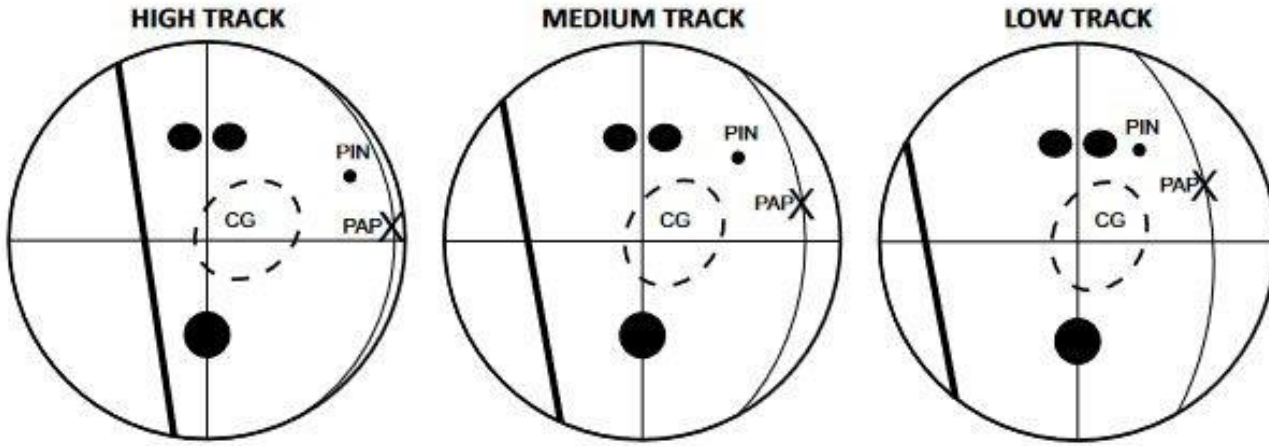
Weight Blocks



Over the years in the sport of bowling, the bowling industry has designed the engine of the ball known as the weight block. This gives the pro-shop operator another tool for the bowler's arsenal. In the 1980's the bowling ball manufacturers started to create different weight blocks for the balls. By the 1990's there were all kinds of symmetrical & asymmetrical weight blocks in addition to messing with the cover stock. A symmetrical weight block would be like a baseball where it is equal & balanced on all sides. An asymmetrical core is like a coffee mug where it is unequal in dimensions and the weight is unbalanced. Pro-Shop Operators, bowlers, and coaches must communicate to get the best result out of the ball that they can.

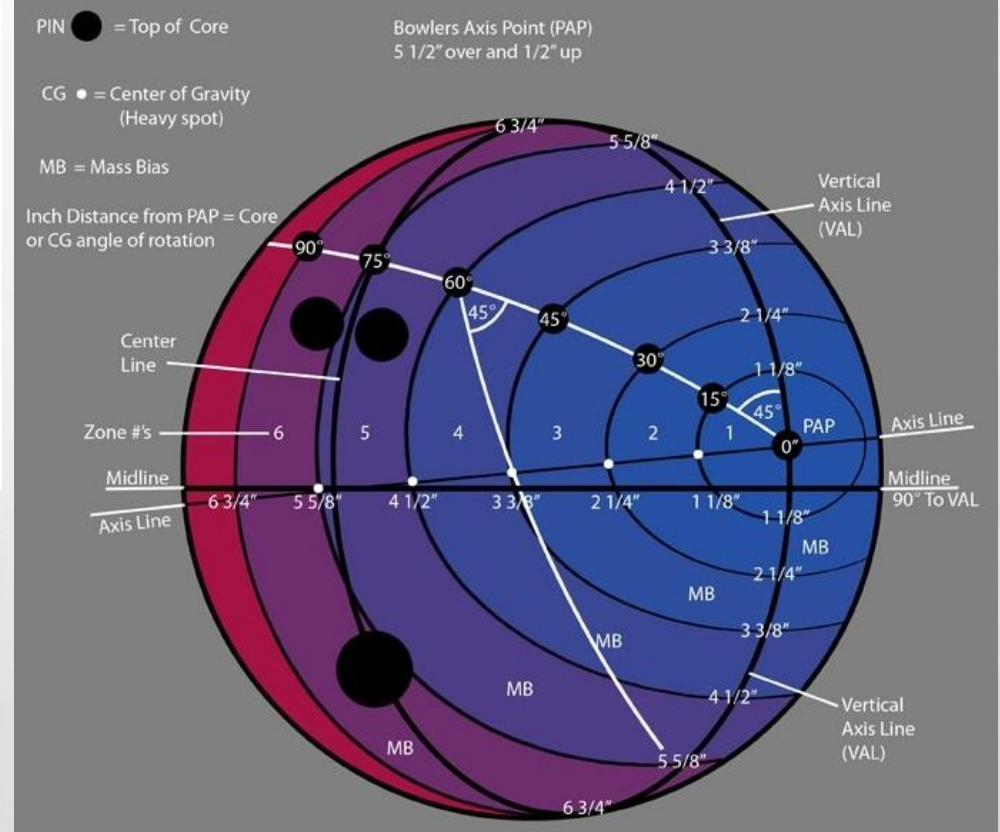
DRILLING LAYOUTS

Symmetrical drilling layout



Above are symmetric layouts for a High, Medium, and Low track bowler. A Pro-Shop Operator needs to observe a bowler's style in order to determine the best drilling layout. A layout is specific to a bowler and the bowling ball.

Asymmetrical drilling layout



MAINTENANCE OF A BALL

Cleaning a bowling ball is important because it accumulates old oil and debris. A general rule of thumb is that a ball should be cleaned after 20 games. Various cleaning solutions are picture to the right and cleaning tools are at the left.



Bowling Ball Seminar.

Here is an opportunity for Bowlers, Coaches, and Pro-Shop Opportunities to enhance their knowledge about the bowling ball. Good luck and score well on the quiz and the lanes.

1. Name at least one coverstock used for bowling balls?
A.
2. True or False. Sanding the ball brings the breakpoint closer to the bowler.
A.
3. True or False. A bowler can alter the surface of the ball during competition.
A.
4. If the pin is drilled under the fingers is this a pin down or pin up layout.
A.
5. A coffee mug is similar to what type of a weight block.
A.
6. A water bottle is similar to what type of a weight block?
A.
7. What part of the ball touches the lane surface?
A.
8. After how many games should a bowler clean their ball?
A.
9. True or False. In an asymmetrical ball there is a mass bias.
A.
10. True or False. A polished ball will move the breakpoint closer to the pins?
A.



Major Tournaments

Triple Crown, Grand Slam, and Super Slam



U.S.
OPEN



Past These Doors are the
World's Finest Bowlers



**TOURNAMENT
OF
CHAMPIONS**



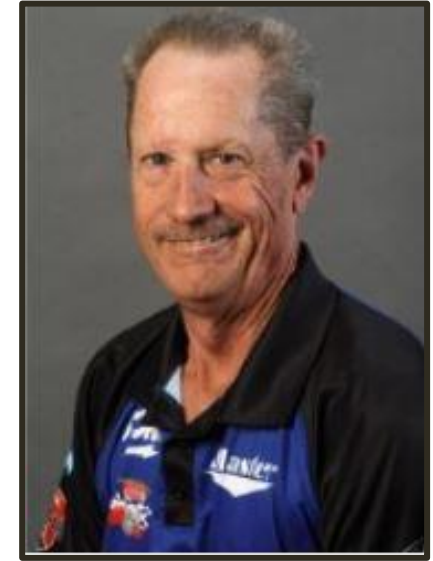
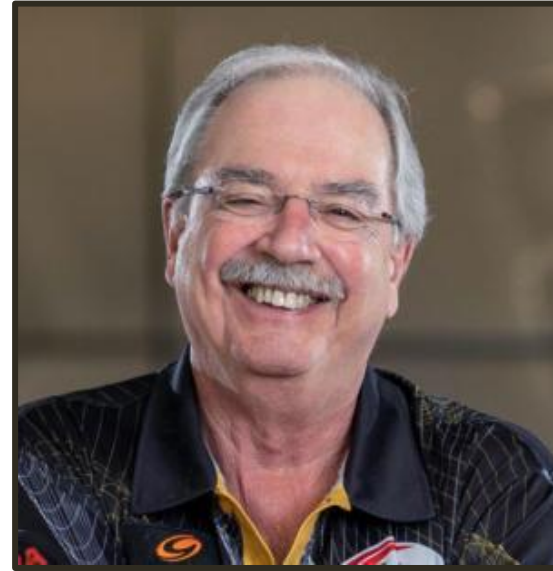
**PBA PLAYERS
CHAMPIONSHIP**



USBC
MASTERS

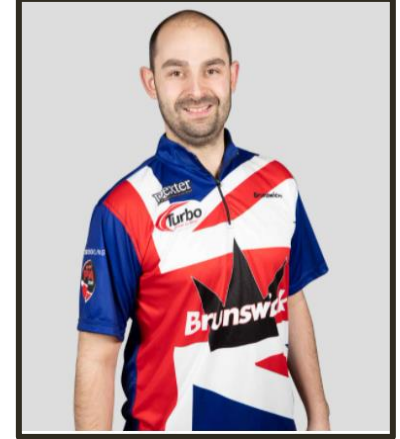
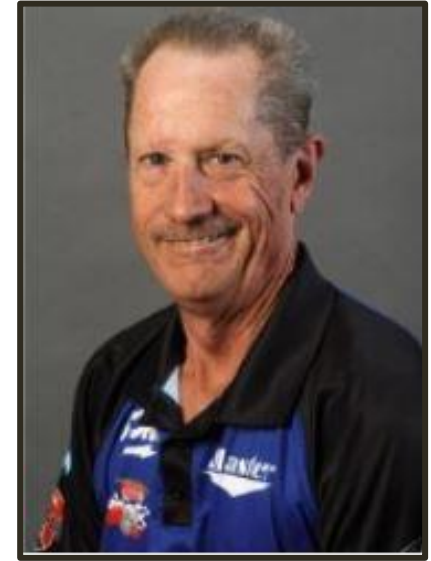


Triple Crown means that a PBA player has won the US Open, Tournament of Champions, and the PBA World Championship.



Year of Completion Triple Crown

Billy Hardwick 1969
Johnny Petraglia 1980
Pete Weber 1989
& 2013
Mike Aulby 1995
Norm Duke 2008
Chris Barnes 2011
Jason Belmonte 2020
Dom Barrett 2022



Grand Slam means a PBA Player has won the Triple Crown plus the USBC Masters only three players have done this.



Mike Aulby completed the Grand Slam at the 1995 Brunswick World Tournament of Champions.

Norm Duke completed the Grand Slam at the 2008 US Open.

Jason Belmonte completed the 2020 US Open.

Super Slam means that a PBA Player has won the Grand Slam plus the PBA Players Championship only two players have accomplished this feat.



Mike Aulby completed Super Slam at the 1996 Bayer Brunswick Touring Players Championship



Jason Belmonte completed the Super Slam at the 2020 US Open.

PBA Majors Quiz

A faint, stylized background illustration of bowling pins and a bowling ball. The pins are arranged in a triangular formation, and the ball is positioned in the lower right foreground.

In this quiz bowling fans will have a chance to test their skills at having a better understanding about the PBA Majors. This will not be an accredited course for the Bowlology Academy but a knowledge test for PBA fans & students. Good Luck and it was great to present the PBA Majors.

1. Identify what tournaments in the Triple Crown a bowler must win?
2. What is the tournament that only PBA Champions can participate in?
3. Name one of the two bowlers that have completed the Super Slam?
4. What tournaments make up the Grand Slam?
5. True or False Billy Hardwick was the first bowler to complete the Triple Crown.
6. At what tournament did Mike Aulby complete the Grand Slam?
7. True or False Pete Weber became the first Player to complete the Triple Crown twice at the Tournament of Champions.
8. At what Tournament did Norm Duke become the second player to complete the Grand Slam?
9. At what did Chris Barnes became the sixth player to complete the Triple Crown?
10. At what tournament did Jason Belmonte become the second player to complete the Super Slam?

Bowlology Academy Epilogue

From the Joe Bowler on the local lanes to the PBA Tour Bowler competing at the Tournament of Champions all bowlers can learn from the material presented to take their game to the next level. Bowlers should take their game to the next level but cannot expect perfection on the lanes every time but should just keep knocking down as many pins as a bowler can. Rather the bowler has a good showing with 30 frames in their league or 180 frames at the Tournament of Champions than hitting next to nothing or thinking they will be the Strike King of the Lanes and falling short of high expectations.

The difference between the pro bowlers and amateur bowlers is that amateurs look at where the ball enters the pocket as opposed to pros looking to see how the ball goes through the pins. If a bowler can make the ten go out on a half pocket shot and also carry the solid pocket hit and have a light hit pocket and strike they know they are going to be able to score throughout the tournament or league. All bowlers are trying to strike in different ways. The US Open pattern on the PBA Tour is by far the hardest pattern to string a number of strikes together. Just ask Pete Weber, winner of 5 US Open titles. This is not an easy task to complete.

Always know the fundamentals of the game as every detail done right or wrong counts toward the end result on the lanes. I went bowling one time, and my caregiver stepped over the foul line nearly falling. She did not know that there was oil on the lane, so I told her. She asked why, I explained to her that it is like golf where there are trees, bunkers, water hazards, and rough. I also explained that this helps the bowler know where to throw the ball and where not to throw the ball. Then she was able to understand.

I had another caregiver who bowled and had high-performance bowling balls yet could not describe pin location to me. She also told me she had bowled a 240-game and a 250-game, but did not shoot a 600 series. On top of that, she told me she was better at converting splits than spares. She was a right-hander but slid on the right foot instead of the left foot.

A golf professional that I know once told me that he would take a first-time golfer out on the range and work with them on their driving, chipping and putting before they could even go play a round of 9-holes.

Have a great time learning about the sport and your abilities while you take it to the next level with the Bowlology Academy.

