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BCA Instructor's Manual

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Preface

The concept of a BCA Instructor's Manual was developed at the BCA International Trade Expo at Kansas City in July, 1993. A committee was formed to develop a guideline that instructors could use for teaching billiards. The committee members were Jerry Briesath (chair), Randy Goettlicher, Bob Jewett, Joseph Mejia and Richard Rohrer.

The objective of this manual is to provide all an instructor needs to develop and execute a course of instruction. It provides raw material, blueprints, and construction methods.

A new instructor will find in this manual everything needed to organize and execute a successful course. These include lists and explanations of necessary topics for different levels of instruction, example outlines of courses of various formats, and suggestions on how to develop advertising and form alliances with others in the billiard industry.

Even more experienced instructors will find much here that can be useful to them, including new lesson formats, new ways to approach teaching certain points, and some technical details that will help them better understand parts of the game.

This manual is very much a work in progress. Because there are many aspects of both the game and methods of teaching the game that are not well or widely understood, continuing input from Certified Instructors is both welcomed and essential to improve the manual's usability and completeness. Greatful acknowledgement is due to those who have already contributed to this manual:

Jerry Briesath	The Pool School	Madison, Wisconsin
Randy Goettlicher	Cue-Tech	Dallas, Texas
Joseph Mejia	S.F. Billiard Academy	San Francisco, California
Bob Jewett	S.F. Billiard Academy	San Francisco, California
Jack Koehler	Science of Pocket Billiards	Laguna Hills, California
Leslie Rogers	Cue-Tech	Dallas, Texas
Dave Keaggy	BCA Certified Instructor	Phoenix, Arizona

The following have provided diagrams and additional instruction tips:

Ron Hayes	ABC Pool School	Alameda, California
Eric Harada	S.F. Billiard Academy	San Francisco, California
Ed Nagel	BCA Advanced Instructor	Santa Rosa, California



BCA
Certified
Instruction

CHAPTER 1

Program Overview

The BCA Instructor Certification Program started in 1993, and is intended to raise the level of cue sport instruction to the level of other organized sport instruction. The Program has four levels of Instructor:

Recognized House Instructor - This level is intended for those interested in basic instruction in addition to other aspects of billiard retailing, such as equipment maintenance and marketing. No previous experience is required, and the typically one-day course will be primarily lecture.

Certified - the first certified level. Extensive instructing experience is strongly recommended prior to an Instructor Training class to gain this level. This is intended for those seriously interested in billiard instruction.

Advanced - for instructors with four years of teaching experience and other experience working in clinics with other instructors or in an Instructor Training Class as an assistant to a Master Instructor.

Master - this is the highest level of Instructor, and reserved for those Instructors capable of training other Instructors. Instructors at this level are also expected to show leadership in parts of billiards besides instruction.

The program consists of several parts:

Training

This manual should be regarded as only part of an Instructor's training. It is most useful when used as part of an Instructor Training Course given by a Master Instructor. Such a course will include explanations, examples and hands-on training that this manual can't provide. After completion of the course, this manual will serve as a reference and aid in developing effective courses and programs.

Testing

Testing as part of the Certification process is necessary to ensure that the candidate is qualified and to let the Master Instructor know whether the training has been effective. Testing during Instructor Training will include demonstrations by the candidate of teaching methods during actual lessons and possibly also a written test of the technical details of the subject matter.

Feedback

No certification program would be complete without some method to monitor and maintain the quality and professionalism of the instruction. Students of each BCA Instructor are given feedback forms to provide criticisms and suggestions for improving each instructor's methods.

The details of the Certification Program can be found in Appendix A.

Developing Your Teaching Methods

Effective teaching requires more than mastery of the subject matter. A good instructor must be able to transfer that information efficiently to the student. As a player, you have spent most of your time learning how stick, balls and cloth work. As an instructor, you must learn how the student's mind and body work. Instead of perfecting your own smooth draw stroke, you will work on a fool-proof way to get a beginner to draw the ball with confidence. Here are some items to consider for inclusion in your teaching methods.

- During your initial introduction to the student, try to learn about the student's interest and objectives. Set up a comfortable atmosphere. Try to include the following:
 1. Discuss the student's background and goals.
 2. Find common interests among your students if in a group situation.
 3. Give an overview of what you plan to do: video analysis, drills, goals, etc.
 4. Maintain a positive attitude.
 5. Allow time for questions and answers; develop a dialog, not a monolog.
- Usually an instructor should not have his/her cue when instructing. A student will learn more from doing than from watching you execute runs or hard shots. In a group situation, try having a more experienced student demonstrate to the others, then have the less experienced students execute the technique.
- Learn to criticize constructively. For example, point out a positive item or a noted improvement before pointing out a flaw, and then end on another positive note.
- Show examples of self analysis. A spot marked 4-6 inches in front of the cue ball will give a goal for follow-through, and the student can see immediately whether they meet the goal on each shot.
- Motivate students by working on *their* problems. Many students with years of experience insist on working on certain problem shots (maybe banks). Take time to focus on what they want and only gently make positive criticism on the real source of the problem (maybe jumping up).
- Listen with an open mind. Not everyone expresses themselves perfectly, and your students may not phrase ideas they way you would. First make sure you understand what they are saying, then try to separate what you *know* from what you *believe* about the subject. Students have an amazing ability to teach, if the instructor is willing to listen.
- Listen for feedback. Is your instruction getting across to the student? Do you ask questions? Is the student interested in what you are teaching?

- Develop quick and convincing demonstrations. Do you want to show the curve due to draw? Work out ball positions that show indisputably that the cue ball is curving. An ideal demonstration will focus a single topic, be quick to set up, and can be done by the student.
- Work out teaching techniques that sharpen specific skills. For example, there are some drills that develop a straight stroke in Appendix B, while the “Zen Draw” drill in Appendix D will allow almost anyone to get zippy draw within five minutes. You should be ready with a good, fast solution for each common problem that students have.
- Learn how to use teaching tools. Appendix B shows some specific shots to use when video taping. Learn to improvise with the equipment at hand. A cue stick can be held horizontally just under the upper arm to give immediate feedback for elbow drop and can turn into a plumb bob to measure tilt of the forearm. A mirror in the right place can give immediate feedback to the student for errors in stance and stroke, and if mobile can demonstrate how to aim banks.
- Use the tables efficiently, especially when you have more students than tables. Many drills can be modified to accommodate two students per table, for example stroke drills along the two long rails. A pair of students may have to alternate shots when sharing a table, so encourage the idle student to watch and make suggestions to the shooting student.
- Set goals. The student should be working towards something specific. It might be 80% accuracy on a certain bank shot or a good finish in a local tourney, but it should be measurable.
- Evaluate progress. Are your lessons doing the student any good? You should have a way to measure progress towards the goal. A before-and-after video analysis using the rating sheets in Appendix B can measure general progress. The progressive practice drills in Appendix C can quickly and accurately measure several basic skills. Keeping a record of Equal Offense scores is another good way to evaluate over all improvement.



CHAPTER 3

Topics for Lessons

The most difficult part of setting up a structured class is deciding on the content. The second is deciding the order of presentation.

What follows is a list of topics divided into basic and advanced categories. Lessons for beginners might include a few of the advanced topics, but it is important to get in all of the basics first. Advanced students will be more interested in the tougher topics, but some review of the fundamentals may be necessary.

The order of presentation is critical, especially for the beginning student. There is little point in teaching massé shots when chalking is still a mystery. The order in the section on Basic Topics attempts to put first things first.

Once you have decided on which topics to cover, put them into your own outline as a hand-out for the students. This will simplify note taking, which is essential if the student wants to review the lesson.

Basic Topics, Summary

1. Fundamental principle of learning pool: keep things constant.
2. Cue selection, goal: consistent, accurate shots
 - a. tip: curvature and minimum thickness of a nickel
 - b. ferrule: tight, no clicking
 - c. diameter: larger than 13mm loses control of spin shots
 - d. weight: about 19-20, but always the same
 - e. straightness: how to compensate
 - f. squirt/deflection: on spin shots, mostly shaft induced
3. Chalk, goal: avoid miscues on spin shots
 - a. What: a uniform coating of chalk increases tip-to-ball friction
 - b. Technique: one way that works is to use the edge
 - c. Check! Look at the tip.
4. Stance, goal: permit consistent sighting and stroking, reduce variables
 - a. bridges: open, closed, fist
 - b. left arm: straight elbow reduces variation
 - c. head/eyes: with a dominant eye, sight like a rifle
 - d. legs/feet: solid, a straight back leg will reduce variation
 - e. right arm: free to swing like a pendulum, forearm mostly
 - f. grip: simple, consistent, wrist neither in nor out
5. Stroke sequence, goal: cultivate an efficient, smooth motion
 - a. Eye motion: cue ball and object ball, object ball last
 - b. Zeroing in: aim, fiddle, adjust, aim, fiddle, adjust, etc.
 - c. Back swing: unhurried, pause
 - d. Final stroke: forward at appropriate speed, follow through
6. Basic sighting, goal: get an approximate target until experienced
 - a. Half ball shot: the only angle with a clear target
 - b. Other fractional shots: full, 3/4, 1/4, etc.
 - c. Lingo: Thinner, thicker, more ball, less ball, fatter, degrees of cut
 - d. Thin cuts: edge at edge
7. Straight shots for position
 - a. Follow: natural rolling, least accurate when close (short shot)
 - b. Stop: easiest to plan, most accurate on short shots
 - c. Draw: most difficult to control
8. Angle shots for position
 - a. Perpendicular cue ball path at first instant
 - b. Follow: bends the cue ball forward
 - c. Draw: pulls the cue ball back
 - d. Stop: continues along the perpendicular

9. Using side spin
 - a. Why? Usually to change rebound from rail
 1. Running adds speed, and “widens” angle (more parallel to rail)
 2. Reverse reduces speed and “steepens” angle (more perpendicular to rail, generally)
 - b. Problems
 1. Miscues: Check your tip!
 2. Squirt: like a minor miscue, cue-dependent
 3. Swerve: back the other way, Stay level!
 4. Throw: ball-to-ball friction
 5. Cling/skid: like extreme throw, unpredictable
10. Other bridges
 - a. From the rail
 - b. Over an obstacle (up on finger tips)
 - c. Mechanical: watch for burrs, keep it simple
 - d. Left handed

Advanced Topics, Summary

The following subjects are not in any particular order. They mostly rely on mastery of the basic subjects. Many of the topics below could fill several hours of instruction.

1. Bank shots
2. Jump shots
3. Masse shots
4. The rules
5. Tip and cue maintenance
6. Object balls frozen to the rail
7. Equipment defects
8. Kiss shots (two object balls close or frozen)
9. Combination throw shots
10. Glossary of pool terms
11. Kick shots and systems (1, 2, 3 rails)
12. Half-ball angle, caroms and position
13. Follow angle systems
14. Draw angle systems
15. Best target: Where's the pocket?
16. Shot difficulty rating
17. Close-ball techniques
18. Interference system (cue ball frozen to object ball)
19. Concepts for running the table
20. Other games:
 - a. In-off pool (shoot the object balls to scratch off the cue ball) or English billiards
 - b. Carom billiards: straight rail
 - c. Carom billiards: three cushion
 - d. Snooker
 - e. Golf
 - f. "Mum" pool (no chalking, no talking, no fouling, no resting the cue on the floor, no making the last ball on the table -- played by several players, last one left wins)
21. History of the sport
22. Present state of the sport
23. Table specifications and nomenclature
24. Table maintenance
25. Trick shots
26. Bar pool: how it's different from pool on full-sized tables



A lot of instruction is based on one-on-one sessions of an hour or so. While such instruction can be very beneficial to the single student, the total amount of learning is relatively small compared to structured, group lessons. Also, the total income per hour can be larger in the group format.

Eventually, each Instructor will develop his/her own type of course to suit the needs of their particular community -- perhaps a fun introduction to pool for the not-very-serious players at a youth club or retirement complex, or a multi-week class at a university or community college, or an organized but flexible one-on-one course for a student with particular interests. Below are some suggestions for specific course formats. Included are:

1. A five-session, ten hour course.
2. A four hour beginner/intermediate course.
3. A four-hour course given as a clinic with three instructors.
4. A ten-week course meeting twice a week, maybe at a college.
5. A format for one-hour private lessons directed at a specific game.

After the course outlines, there is a time table or checklist of events that you may want to include in the execution of a course.

Ten Hour Course

Format: A five-session course meeting once per week. About two hours per meeting.

Level: Beginner

Ratio: One instructor for four to six students. One or two students per table.

Summary:

Each topic is covered briefly, and the students practice/execute/perform the lesson immediately. The instructor helps with problems and questions during the practice time, then gathers the students for discussion of the next topic.

Handouts: Course outline, practice drills, list of references/retailers/tourneys

Outline:

Lesson 1

1. Cue selection
 - Tip
 - Ferrule
 - Diameter and weight
 - Straightness
2. Chalk
 - Goals and how
 - Possible problems
3. Stance
4. Bridge
 - Open
 - Closed (fist, standard)
5. Grip
6. Stroke sequence
7. Drill -- "Back to the Tip"

Lesson 2

1. Basic sighting
 - Phantom cue ball
 - Half ball angle

- Object ball last
- Thin shots
- 2. Rail bridges
- 3. Mechanical bridge
- 4. Cut shot drill (from Progressive Practice)

Lesson 3

- 1. Basic position play
 - Follow shots
 - Stop
 - Draw (and draw/follow)
- 2. Cut shots with draw and follow
 - Perpendicular for start of path
 - Bending the line with draw/follow
 - Correct speed
- 3. Follow drill
- 4. Draw drill

Lesson 4

- 1. English, Uses
 - Moving the cue ball using the rails
 - Throw shots, close
 - Slight swerve shots
- 2. English, Pitfalls
 - Squirt
 - Swerve
 - Throw
 - Miscues and cling
- 3. Drills
 - Up the center, how much angle with english
 - Easy shots to the corner with english

Lesson 5

- 1. Combinations and throw shots
- 2. Kiss shots
- 3. Carom shots and the half-ball angle
- 4. Bank shots -- simple systems
- 5. Care of tip, shaft, balls, and table
- 6. Wrap up and review

Four Hour Beginner's Course

Format:

A four-hour intense course, could be given as a multi-instructor clinic, but each group of students is independent. With a larger total number of students, it is possible to group them by ability. In a clinic format, the reviews could be done all together.

Level: Beginner/Intermediate

Ratio: One instructor for each four students. One or two students per table.

Handouts: Course outline, practice drills, list of references/retailers/tourneys

Outline:

Hour 1

1. Basic pool terminology
2. Cue selection
3. Stance/body alignment
4. Stroke (Throwing motion)
5. Bridge (open/closed)
6. Drills

Hour 2

7. Review hour 1, answer questions
8. Aiming systems
9. Shots with side spin (center, top, bottom)
10. Carom angle (cue ball deflection off the object ball)
11. Drills

[Lunch break]

Hour 3

12. Review hour 2, answer questions
13. English -- uses and problems
14. Banking
15. Drills

Hour 4

- 16. Review hour 3, answer questions
- 17. Overview of three games (8-ball, 9-ball, straight pool)
- 18. Position play
- 19. Strategy
- 20. Drills

Four Hour Clinic

Format:

A four-hour intense course, given as a clinic with three instructors for up to twelve students in three groups. The instructors have three stations set up, and the students move from station to station each forty minutes. After the first three stations, there is a break. This format allows the instructors to master a particular aspect of the course, such as video taping, since they will do it three times for the three groups.

Level: Beginner/Intermediate

Ratio: One instructor for each four students. One or two students per table.

Handouts: Course outline, practice drills, list of references/retailers/tourneys

Schedule:

Session 1, two hours

Station 1

Station 2

Station 3

Video taping

Progressive practice drills

Basic principles, first part

[Lunch break]

Session 2, two hours

Station 1

Station 2

Station 3

Stroke, cueing
and mechanics

Basics, part 2

Question and answer
session, review

Ten Week Course

Format:

A 10-week course meeting twice a week, perhaps at a college recreation center. One hour (50 minutes) per day. The students warm up for the first ten minutes each day to allow for late arrivals. The second ten minutes or so is a mini-lecture on the topic of the day. The remainder of the hour is spent in practice or play with the instructor helping with questions and problems.

Level: Beginner

Ratio: One instructor for 10-16 students, two students per table.

Handouts: Course outline, simplified rules of 8 ball, list of references

Outline:

Week 1

Selecting a cue, chalking, basic open bridge, stance

Basic sighting, rules of 8 ball

Week 2

Speed/stroke drill, rail bridges

Mechanical bridge, closed bridge, playing left handed

Week 3

Follow shots

Draw shots

Week 4

English - benefits

English - pitfalls

Week 5

Stroke practice, margin of error

Ten Week Course

Throw shots, combinations

Week 6

Kiss shots

Carom shots, the half ball shot

Week 7

Bank shots

Massé and jump shots

Week 8

Care of equipment

Rules of straight pool

Week 9

Rules of 9 ball

Rules of billiards

Week 10

Two days, double elimination 8 ball tournament

One Hour Course

Format:

A one-hour lesson for a player who is interested in getting better at a particular game. Typically the student will need several sessions as new problems are uncovered and solved.

Level: Various, but usually advanced

Ratio: One instructor and one or two students

Summary:

The student plays the game of choice for the first twenty minutes or half hour while the instructor takes note of problems and makes some suggestions on strategy and position. The last part of the hour is spent in working on the particular problems noted and perhaps developing special drills for those problem shots.

Handouts: Drill sheets, either standard or custom-tailored to the student's problems.

Course Time Table

This section lists the various things that you need to do plan, execute, and subsequently improve a structured course.

Before class day:

Advertise. The best advertising seems still to be word of mouth. Also try: local billiard publications, flyers (distribute to billiard rooms, college rec centers, billiard supply stores), league newsletters

Get complimentary issues of billiards publication to hand out.

Decide what topics will be covered. If there are any that are new for you, review them ahead of time, and maybe try them in an individual lesson. Write down notes on your own copy of how to expand on various points.

Prepare handouts and copy them.

Contact students a day or two before, especially if no deposit has been paid.

During the class:

If some students are late, start the prompt ones practicing or filling out self-evaluation forms.

Greet the students: introductions, go over evaluations, distribute handouts, summarize outline. Mention any special features of the room, such as discounts or tournaments.

Teach the material, taking notes on your handout about problems or things to add. Note how long each item takes, and how easily the students mastered it.

Remind the students to turn in the BCA evaluation forms.

Hand out the free billiard publications.

After the class:

Revise the handout as needed, and update the annotations on your master copy.



There are many areas of pool where a much deeper understanding can be achieved by knowing a little high school-level physics. While it is clear that no such knowledge is required to play at the top level, some will find it useful when they get a student who keeps asking "Why?" It may also save some instructors from saying things or expounding theories that are wrong.

The best reference on how the balls, cloth, rails and tip work was written over 150 years ago by a French engineer named Coriolis (who also explained how the cold polar regions and the rotation of the Earth cause the trade winds). Unfortunately, it is written in French and is rather technical which puts it out of the reach of most pool students in this country.

Another technical source for those with a considerable background in math are the college text books on physics and mechanics from the turn of the century -- a time when every well educated young man was expected to know a little about billiards -- which often have a whole chapter on the various aspects of spinning spheres colliding on a slightly rough, usually horizontal surface.

The discussions [to be finished] below are aimed at anyone who remembers some of the physics and a little of the math that they had in high school. A good current reference is Jack Koehler's book "The Science of Pocket Billiards," which is good at careful descriptions of the various phenomena involved, but does not go into the underlying "why" of most of the topics. Another is a book published in 1995 by Wayland C. Marlowe titled "The Physics of Pocket Billiards," which gets quite deeply into the science but will require some college-level physics for full understanding.

1. Definitions and descriptions of phenomena

- Mass

- Speed

- Velocity

- Friction

- Momentum

- Energy

- Elasticity

- Angular momentum

- Line of centers

- Cut angle

2. Cue stick to cue ball contact

3. Stop shots

4. Stop shots at an angle

5. Follow shots

- Half ball angle

- Angle for nearly full hits

6. Calculating the difficulty of shots

7. Throw

8. Swerve

9. Squirt

10. Massé shots

11. Simple banks

- Mirror principle

- Why the mirror principle doesn't work

12. Diamond systems

13. Imperfections in Equipment

14. Two balls frozen -- Hertz' law



Instructor Professionalism

Billiard etiquette

Part of what you teach is the correct attitude towards the sport. Mostly you will teach this by example, but you may want to bring up some of these points explicitly if a student is slow to catch on.

- Respect the rights of other players around you.
- Avoid profanity and speaking loudly.
- Respect the room's equipment:
 - Do not bang cues on the table
 - No drinks on the table
 - Return cues to the cue rack
 - Replace mechanical bridges in holders
 - Do not sit on the tables
- Avoid distracting any player who is in the process of shooting, and especially avoid movement in their line of sight.
- Keep the table as clean as possible by such habits as placing the chalk right side up and keeping the use of talc to a minimum.
- For safety, do not twirl the cue like a baton.
- Learn the rules and play by them.

Promptness

Be on time for any scheduled lesson. If you are unavoidably delayed, call and make sure the student knows what the situation is. When possible, it is good to plan to arrive a little early, perhaps to discuss something with the room owner or to try out a new drill before the start of the lesson.

Appearance

People will judge you by your appearance. Cultivate an air of professionalism. A logo on a polo shirt, sweater or blazer will set you apart as someone special.

Gambling

One of the quickest ways to ruin your credibility is to take advantage of a student by gambling with them. As soon as you undertake to teach someone, you must remove them from your list of possible "matches".

Limit criticism of other instructors

Treat other instructors with the respect that you would like to receive.

Improve your professionalism

A professional will work to reach a higher skill level at whatever they do. As an instructor, you should seek more knowledge and better teaching techniques, and also work for competence in other areas of the sport. Examples are given in Chapter 7.

Abide by the Instructor Code of Conduct

BCA Instructor Dave Keaggy is also a master instructor in archery. He contributed the Code of Conduct on the next page, which is modeled on one from that sport.



BCA Certified Instructor Code of Conduct



My first obligation is to offer my student the best of my knowledge and experience.

I will do this in a manner conducive to good learning in a positive, non-threatening way.

I will be considerate and tolerant of my student's shortcomings.

I will dress appropriately, be well-groomed and refrain from using offensive language or overly expressive terms.

I will not become impatient or intolerant or show any visible signs of irritation.

I will not smoke or drink alcoholic beverages during instructional sessions.

My conduct as a professional individual will be exemplary at all times in or around a pool establishment.

I will refrain from placing my hands on a student without permission or a pre-explanation of what I am about to do and why.

I will refrain from speaking negatively about any other BCA Certified Instructor or their published work or any establishment with which I am not associated.

I will endeavor through a continuing process of learning to improve my instructional skills and my ability to present these skills.





Instructor Continuing Education

Becoming a Certified Instructor should mark the real beginning rather than the end of a long path of learning of cue sports. Especially for advancement to the higher certification levels, Instructors are expected to continue their education on their own and with the help of other Instructors.

Some of the activities that will help you to master both the content and techniques of billiard instruction include:

Clinics with other Instructors

The clinic format has many advantages, but perhaps the most important one is that it allows direct observation of the techniques of other instructors. Borrow what you can use directly, adapt what doesn't quite work, and try to understand the parts that just seem wrong. There are many ways to approach pool instruction -- keep an open mind.

BCA Technical Committees

The BCA has several technical committees, including those involved with instruction. If you feel you have developed some expertise, ideas, or abilities that pertain, volunteer. Be prepared to work.

Articles for Billiard Publications

There are many local billiard newsletters springing up in addition to the major national publications. Consider writing an instructional article for one of these. Be ready to rethink your methods and develop a real foundation for the techniques you discuss.

Study the Current "Literature"

There are lots of new publications every year -- magazines, tapes, books, and newsletters. It is impossible to keep current with all of them, but try to remain current with the major ones. Video tapes are expensive for what they offer, but if a student mentions that they have trouble understanding one that they have, offer to try to explain the more opaque parts. The BCA has recently produced an excellent "basics" tape featuring Master Instructor Jerry Briesath, titled "Playing Pool Right."

Develop an Analytical Frame of Mind

When you see a new idea at pool, don't just accept it if it seems to work. Examine it carefully. Try to see what the logical extensions are. Does the idea break down under some conditions? Are the underlying principles real and accurate or just convenient and very rough approximations (as you find in many kinds of aiming or banking systems).

Learn to Experiment

Shooting a shot once or twice with a new technique proves little. Try to test the idea by setting up a careful experiment. It may not be necessary to go to the lengths of a Jack Koehler to get the necessary accuracy and repeatability, but then again it may be. In all experiments, try to estimate your margin of error and your degree of confidence in your conclusions.



CHAPTER 8

Publicizing Your Services

You've read with care and attention the first seven chapters of this manual, you've developed a course that will improve anyone's game in a few hours, and you've lined up a place to transfer all the knowledge you've gleaned over the years to the eager students about to burst through the doors. But where are those students? They need to know that you're available for billiard instruction. Here are some suggestions for getting the word out:

- **Classified ads.** If you want to keep your focus relatively local, many urban areas have "town flyers" that are weekly classified ads distributed to local towns. Colleges and universities have student newspapers and the audience is exactly what you want: people ready and willing to learn.
- **Flyers.** Make up a single page that tells what you do and how to contact you. If you have any special events scheduled, like a one-day clinic, be sure it's included even if the flyer has to be revised.
- **Mailing lists.** Build a mailing list of prospective and past students. Some of them will need more lessons as they progress, and you want to be sure to remind them where they can find them. If you organize a more advanced course - on nine ball perhaps - let them know when.
- **Local billiard publications.** Regional billiard newspapers and league newsletters are ideal conduits to just the sort of people who need to know about your services. You may want to publicize your more advanced lessons in these, since the readership is already serious about the sport. Often such publications desperately need stories or instructional material, and this will let you get your name out and build a reputation.
- **Alliances.** Contact student unions, schools, recreation centers (both public and private), retirement centers and billiard rooms. Many managers of such organizations or businesses are eager to find something new to improve recreation for their customers. Often they can provide groups for lessons, greatly reducing the effort you need to put in to find students.



APPENDIX A

*Certification Program
Items*

This appendix includes a description of the instructor certification requirements and the necessary forms. Included are:

1. The requirements for the one level of recognition and the three levels of certification.
2. The candidate application form.
3. A copy of the questions used on the written tests.
4. An example receipt page.
5. Student feedback forms both for individual lessons and multi-instructor clinics.

Certified Instructor Requirements

The Billiard Congress of America certifies instructors on various levels of expertise. Below are the descriptions of each level.

Recognized House Instructor Level

This level gives recognition only that an instructor possesses some knowledge of the sport and some training skills in working with novice and intermediate players. Further recognition of the skill and experience required of serious instructors is acquired by attaining Certified or Advanced Levels.

Past Activity: None required.

Practical Test: A "House Instructor" candidate must train under the supervision of an Advanced Level or Master Level Instructor for a minimum one-day session. Host instructor sets price of instruction. \$35 annual BCA recognition fee once reviewed and recommended by host instructor.

Certified Instructor Level

Past Activity: Extensive experience strongly recommended. An instructor candidate training course shall include instruction from two or more BCA Certified Instructors and/or letters of recommendation. Candidate then must attend and meet the requirements of an instructor's training course at a Master Instructor Academy.

Written Test: Some Master Instructor Academies require a written test both before and during training and evaluation. Details are available from the Master Academy of your choice.

Practical Test: While under the supervision of a Master Instructor, the candidate must give a full four-hour beginner's course to at least one student who has had no previous instruction from that candidate. The candidate should submit a video-tape of one or two one-hour teaching sessions. A Master Instructor should observe that the candidate must demonstrate the ability to use video equipment as a teaching aid. \$50 annual BCA certification fee once approved by Master Instructor.

Advanced Instructor Level

Past Activity: The candidate must be a Certified Level Instructor for a minimum of four years. The candidate must have assisted a Master Instructor with an Instructor Training Course. The candidate must have been distributing BCA student feedback forms regularly, and the comments received on these forms must be generally positive.

Write Test: Some Master Instructor Academies require a written test both before and during training and evaluation. Details are available from the Master Academy of your choice.

Practical Test: While under the supervision of a Master Instructor, the candidate must demonstrate the ability to teach advanced players strategy and techniques and to recognize and correct bad habits in advanced and intermediate players. The BCA Certified Instructors Committee will review the candidate's credentials, the recommendation of at least one Master Instructor and Feedback Forms, and determine if an upgrade to Advanced Level is warranted. \$50 annual BCA certification fee once approved by the Instructor Certification Committee.

Master Instructor Level

Past Activity: The candidate must already be an Advanced Level Instructor. The candidate must have assisted at least two Master Instructors on separate occasions with instructor training courses. The candidate must have significant additional experience, such as serving as a referee or league official, participation in BCA workshops or committees, writing instructional articles or books, etc.

Practical Test: The candidate must assist with training of at least three instructor candidates, including lectures on teaching methods, giving evaluations of the novice candidate's instructional abilities, and the preparation of teaching aids. At least two Master Instructors must evaluate the performance of the candidate Master Instructor and agree on the promotion. Their recommendation will be forwarded to the Instructor Certification Committee for final approval of certification at this level. \$50 annual BCA certification fee once approved by the Instructor Certification Committee.



Certified Instructor Application

(Attach extra sheets as necessary.)

Name:

Address:

Phones:

If associated with a billiards business:

Name and type of business:

Address:

Phone:

Relationship:

In what year did you first play pool?

In what year did you first teach pool?

In the past year, how many students have you taught pool on a for-fee basis?

How many total hours did that include?

About how many of your students were in each of these categories:

_____ % Novice: Can't form a bridge

_____ % Beginner: Can't run three balls

_____ % Intermediate: Very rarely runs a rack

_____ % Higher

If you use video equipment as part of your instruction, describe your procedure:

If you teach with other instructors, describe the format:

If you teach groups, describe the format (number and type of students, duration, cost, etc.)

For which games are you comfortable teaching basic strategy?

What kinds of written materials do you use during instruction? (attach up to four sheets of examples)

Describe your four favorite practice drills for beginners:

Is there any special experience that prepares you to be a pool instructor?

Which instructional tapes or books do you use as part of your course?

Signature: _____ Date: _____

Return this form to the Master Academy which will conduct the training or to the BCA.




Certified Instructor Examination Sample Questions

1. When a shot is played with side spin, several important effects are noticeable and may cause the shot to fail if not included in the planning for the shot. Name three of those effects, describe them, and describe how you demonstrate them to students.
2. What are the important factors in cue selection?
3. What are the basic goals of the stance (foot, arm, hand, and body position)?
4. What are some specific parts of a good stance that achieve those goals?
5. What is the "dominant eye" and how can you test for it?
6. What are some symptoms of incorrect eye alignment?
7. What conditions are necessary for the cue ball to stop dead at the instant it hits an object ball?
8. What additional condition is necessary for a stop shot (for the cue ball to remain in position after the instant of impact)?
9. Give three common things that cause the cue ball not to stop dead on a stop shot.
10. Describe the "ghost" or "phantom" ball aiming system.
11. What other systems give equivalent aiming lines?
12. For roughly what length of shot is the simple phantom ball system too inaccurate on a half-ball cut shot?
13. What is required to get a lot of draw on the cue ball?
14. What is recommended but not actually required for lots of draw?
15. Describe some situations in which side spin is required to make a shot (not counting position requirements).
16. In damp conditions or on dirty cloth, draw dissipates rapidly. Why?
17. Describe aiming a half-ball shot. Neglecting throw, what is the cut angle for a half-ball shot?
18. Describe the simple "mirror system" for shooting bank shots, and at least three methods of lining shots up for that system.
19. Give three situations in which the simple mirror system is not accurate enough to aim bank shots.
20. How large is a pool ball?
21. With what tolerance?
22. Approximately what fraction of pool balls are not within tolerance?
23. How large is the playing surface on 4x8 and 4.5x9 tables, and how is it measured?
24. What is the required thickness of slate?
25. What are the allowed weight and dimensions of a cue stick?
26. What is the grace period before a match is forfeited for lateness?
27. What should a referee do prior to a match?
28. Is a "split hit" - apparently simultaneous contact on both a legal and an illegal object ball -- a foul?
29. A player places the mechanical bridge with the head up on top of the rail and the handle over the rack area, and then forms a hand bridge up on the handle over the rack. Is this legal?
30. At nine ball, a player is stroking, about to shoot the four ball. A spectator shouts out, "Shoot the three!" What should the referee do?
31. Is a miscue a foul?
32. At nine ball, when does an object ball spot?

33. At nine ball, a player plays the one-seven combination, pockets the seven, but the one ball goes off the table. What happens?
34. A player "pushes out" with the side of his stick, and is warned not to do so. Is there any penalty, and does it change for a second offense?
35. At eight ball, a player makes several stripes on the break, but misses the next shot, hanging the ten ball in the jaws. The opponent calls the ten, and the cue ball touches the eight before pocketing the ten. What happens?
36. When calling a shot at eight ball, what must be specified besides the ball and the pocket?
37. On an open break, how many balls must be driven to the rail if no ball is pocketed?
38. What is the penalty at eight ball for failure to make an open break?
39. What is the penalty at nine ball?
40. With ball in hand after a scratch on the break, what are the restrictions on cue ball placement at nine ball?
41. At eight ball?
42. Give four examples of how a player can foul during the other player's inning.
43. At 14.1, a player fails three times in a row to drive two balls to the rail on the opening break shot. What is the score after those three strokes?
44. What happens if a player unscrews his jointed cue stick?
45. While playing a bank shot, the player places the chalk where he wants to hit on the rail, then shoots. Is that a foul?
46. A player has a toe barely touching the floor just as he strokes, but then jumps back and both feet leave the ground while the balls are still moving. Has he fouled?
47. Describe a push shot.
48. What is the specific criterion used to judge double hits, when the cue starts very close to the object ball?
49. If a ball stops at the brink of a pocket, how long is it given to drop before it is considered not to have been pocketed?
50. May either player inspect the rack prior to the break?
51. If the cue ball is frozen to the object ball, what sort of stroke is permitted towards that ball?
52. At eight ball, what happens if the eight is pocketed on the break?
53. What happens at nine ball if the nine goes on the break?
54. At eight ball, a player calls safe and then pockets an easy, obvious shot. What happens?
55. What happens at nine ball for the same situation?
56. At nine ball, the player pockets the nine, and cue ball is rolling slowly up the table towards the middle of the end rail. The player picks the cue ball up while it is barely moving and places it for the next break. Has he fouled?

Receipt Book Sample

Student Name: _____	 BCA Certified Instruction Date: _____ 19__
Date: _____	Instructor: _____ Student: _____
Location: _____	Time: ____:____ Amount: \$ _____
Hours/Min: ____:____	Comments (Things to practice, etc.)
Amount: \$ _____	

↑ Perforation



Student Feedback Form

This form is to be completed by students of BCA Certified Instructors after a total of about four hours of instruction. The purpose is to monitor the quality of instruction and to provide suggestions to the instructor for possible improvements. This form should not be given back to the instructor but should be mailed directly to the BCA:

Billiard Congress of America
ATTN: Instructor Certification Committee
1700 S. First Avenue, Suite 25A
Iowa City, IA 52240

If you include your name, it will not be given to the instructor to preserve your anonymity and you will receive information about BCA leagues, tournaments and how to become a BCA sanctioned player member.

Student's name:

Address:

City/State/Zip:

Thank you for your participation. Your feedback is important in maintaining and improving the quality of instruction provided by BCA Certified Instructors.

Signature: _____ Date: _____
(optional)



Student Feedback Form

Instructor:

Location of instruction:

Instruction date(s):

Total hours of instruction covered by this form:

Format or level (beginner, special course, advanced):

Rate the instructor on each of the following from A for excellent to F for failing. If you can't judge an item, mark it with an X.

- Knew the material covered.
- Taught in a way the student could understand.
- Answered questions well.
- Was well organized.
- Gave the student time to try the various items covered.
- Was prompt.
- Gave a receipt for payment.
- Helped the student set goals for the instruction.
- Helped the student measure progress towards those goals.
- Gave good value for the money.

What were the instructor's strongest points?

What were the instructor's weakest points?

Which topics could have had more time or were most interesting?

Which topics used too much time or were uninteresting?

Would you recommend this instructor to a friend who wanted lessons?

Other comments. Add additional sheets as necessary.

Date: _____ Signature: _____
(optional)



APPENDIX B

*Example Class
Handouts*

This appendix includes various handouts that can serve as starting points for your customized handouts. Included are:

1. Student self analysis form
2. Overview of "stations" for a clinic format
3. Outline for a four hour basic course
4. Basics Part I
5. Basics Part II
6. Rating sheet for billiard mechanics
7. Diagnostic sheet for common problems
8. Stroke exercise
9. Video analysis explanation

These handouts have been provided by the San Francisco Billiard Academy.



Student Self Analysis

Name: _____ Date: _____ Event: _____

Address: _____

Phone: (home) _____ (work) _____

In order for the instructor to understand your skill level and needs before training, please complete the following:

1. I play about _____ hours per week.
2. Games played: 8 ball _____, 9 ball _____, 14.1 _____, other _____
3. Warm-up time _____ minutes, method: _____
4. My present skill level, as judged by typical game situations, is:
____ (A) can pocket at least one ball less than half the time
____ (B) can pocket at least two balls half the time
____ (C) can pocket at least four balls half the time
____ (D) can run the rack about half the time from an easy start
5. I wish to achieve skill level: A B C D
6. I wish to do this in _____ months.
7. To achieve this goal, I can play _____ hours per week.
8. I can pocket balls better than I can get position. Yes No
9. My knowledge is greater than my ability to execute. Yes No
10. I have read or seen the following books and tapes:

11. I feel my weak points are:

12. I feel my strong points are:

13. My objectives in taking this course are:

Guide to Clinic Stations

This clinic is comprised of six different stations. Each station focuses on a specific aspect of the game.

Students will be divided into three groups and assigned to a station. Each group will participate in all the stations on a rotating basis. Each station will last 40 minutes.

Session I

(2 hours)

Station 1

Video/Technical Analysis

Video used as a tool to give feedback for evaluation. Also, used to highlight the actual mechanics used.

Station 2

Progressive/Skill Drills

Permits precise pocketing percentage predictions. Allows one to adjust the difficulty of the shots to match your improvement.

Station 3

Basics Part I

Basic pocket billiard principles and fundamentals. The goals and methods of cue selection, chalk, stance stroke, and sighting.

Session II

(2 hours)

Station 4

Stroke, Cueing & Mechanics

Learn proper mechanics to develop a fluid stroke. Improve cueing techniques.

Station 5

Basics Part II

Additional pocket billiard principles. Basic positional play with straight-in and angled shots. Principles of english, bridges, squirt, cling, etc.

Station 6

Questions & Answers

Review and comments on the six stations. Aiming systems, banking, and concepts of cue ball positioning. Billiard mechanics rating sheet.

At the completion of all the stations for both sessions, there will be an open forum between the students and the instructors. BCA instructor rating forms will be handed out at the end.

Outline of Sessions

Lesson 1

1. Basic pool terminology
2. Cue selection
3. Stance/body alignment
4. Stroke (sequence, throwing motion)
5. Bridges (open, closed)
6. Drills

Lesson 2

1. Review lesson 1
2. Carom angle/deflection
3. Contact points in aiming
4. Center ball cueing (top, center, bottom)
5. Drills

Lesson 3

1. Review lesson 2
2. English (right, left, with top/bottom)
3. Aiming systems
4. Banking
5. Drills

Lesson 4

1. Review lesson 3
2. Overview of three games (8-ball, 9-ball, straight pool)
3. Position play and strategies
4. Drills

Basics - Part I

Cue selection for consistent, accurate shots

1. Tip - curvature and minimum thickness of a nickel
2. Ferrule - tight, no clicking
3. Diameter - 13 mm maximum
4. Weight - about 19 to 20, but always the same
5. Squirt/deflection - happens when applying english

Chalk to avoid miscues on spin shots

1. Why - a uniform coat of chalk increases friction tip-to-ball
2. Technique - one way that works is to use the edge
3. Check - look at the tip!

Stance to permit consistent sighting and stroking

1. Goal - reduce the variables
2. Bridges - open, closed fist
3. Left arm - elbow straight to reduce variation
4. Head and eyes - dominant eye for some, sight like a rifle
5. Legs and feet - solid to reduce variation
6. Right arm - free to swing like a pendulum
7. Grip - simple, consistent

Stroke sequence to cultivate an efficient, smooth action

1. Eye motion - cue ball and object ball, object ball last
2. Aim and fiddle - continue until shot is correct
3. Slow back swing - pause to maintain control
4. Smooth forward - only the forearm needs to move

Basic sighting to get an approximate target until experienced

1. The phantom ball aiming system
2. Half ball shot - the only angle with a clear target
3. Other fractional shots - full, 1/4, 3/4
4. Thin cuts - edge at edge
5. Jargon - thinner, thicker, fuller, less ball, more ball, fatter, skinnier, degrees

Basics - Part II

Position play - straight shots

1. Follow - natural rolling, least accurate on short shots
2. Stop - easiest to plan, most accurate when close
3. Draw - most difficult to control

Position play - angled shots

1. Perpendicular cue ball path at the first instant
2. Follow - bends the cue ball forward
3. Draw - pulls the ball back
4. Stop - continues along the perpendicular

Position play - side spin (english)

1. Why - usually to change the angle of rebound from a rail
Running - adds speed, widens angle
Reverse - reduces speed, narrows angle
2. Problems - each of them can cause a miss
Miscues - check your tip!
Squirt - like a minor miscue
Swerve - cue ball bends back the other way - stay level
Throw - ball-to-ball friction
Cling/skid - like extreme throw

Other bridges

1. Over an obstacle
2. Rail - as level as possible, several types
3. Mechanical - watch for burrs, keep it simple
4. Left (or opposite) handed

Where to go for more information:

The Official Rule and Record Book and the instructional video "How to Play Pool Right," both from the BCA

Other books and tapes:

Billiard Mechanics Rating Sheet

Name: _____ Date: _____

Fundamental	Comments
Grip <input type="checkbox"/> Cue cradled by back hand <input type="checkbox"/> Hand relaxed <input type="checkbox"/> Wrist aligned with forearm <input type="checkbox"/> Forearm perpendicular at contact	
Bridge <input type="checkbox"/> Anchored bridge hand <input type="checkbox"/> Firm guidance for cue <input type="checkbox"/> Proper bridge length <input type="checkbox"/> Solid rail bridge <input type="checkbox"/> Bridge over ball <input type="checkbox"/> Open and closed bridge tight <input type="checkbox"/> Mechanical bridge technique	
Stroke <input type="checkbox"/> Elbow pendulum swing <input type="checkbox"/> Close approach <input type="checkbox"/> Complete practice strokes <input type="checkbox"/> Slow back swing and smooth acceleration <input type="checkbox"/> Correct extension <input type="checkbox"/> Straight follow through <input type="checkbox"/> Minimum body movement	
Stance <input type="checkbox"/> Feet placed consistently <input type="checkbox"/> Weight and balance even <input type="checkbox"/> Rear leg is straight <input type="checkbox"/> Major parts in a vertical plane <input type="checkbox"/> Appropriate head elevation	
Aim <input type="checkbox"/> Head directly over cue <input type="checkbox"/> Aiming with correct eye <input type="checkbox"/> Alternate cue ball/object ball	

Other comments:

Billiard Fundamentals Diagnostic Sheet

<u>Difficulty</u>	<u>Probable Cause</u>	<u>Recommended Correction</u>
Incorrect head position.	Chin not in alignment along stroke line. Possible dominant eye problem.	Assume stance before leaning into the shot, keep chin & cue ball along stroke line. Test for dominant eye
Grasping or squeezing cue.	Using muscles of hand to grip.	Strive for relaxed wrist & hand. Exert light pressure thumb and first three fingers. Avoid choking the cue with your palm hand. Improve timing - practice a one-hand stroke.
Failure to hold cue long enough.	Tendency to poke, snap shot, or shoot too rapidly. No hesitation used.	Slow back swing and hold or pause in position for a little longer. Practice back swing and pause while aiming with a mirror
Cue finishes in air.	Dropping the elbow instead of hinging and using a smooth stroking motion. Elbow starts dropping while stroking. Too tight a grip may also be a cause.	Focus on closing the elbow to allow the cue tip to finish on the cloth as the grip hand rises. Practice with a rail bridge for stability. In case of too tight a grip, a sticky rather than a slippery wrap may be necessary.

Note: If problems persist, there may be mechanical problems that are more difficult to diagnose. Contact your local BCA Certified instructor and arrange a video-taped analysis of your mechanics.

Stroke Truing Exercises

The object of these exercises is to burn into your muscle memory the right way to **stroke** the cue. This type of practice is especially important for new players to get right so they don't learn bad habits that have to be corrected later.

1. **Over the spots drill.** Place a striped ball on the head spot with the stripe vertical. Using center ball, stroke the ball over the foot spot to the far rail and back over the spots. Ideally the stripe will not even wobble, but set as your goal to keep the ball rolling on just the stripe. Shoot this shot at least ten times. Try to increase the speed while maintaining cueing accuracy.

2. **One-handed drill.** Place your bridge hand on the rail next to the cue stick (but not touching it) for support and to simulate a regular two-handed shot. Place an object ball half a diamond from the rail. **Stroke** the ball into the far corner pocket. Some details to allow you to check your follow-through and straightness:

-- Mark the spot where the object ball is placed, perhaps with a paper reinforcement.

-- Mark a second spot about five to six inches beyond the first spot.

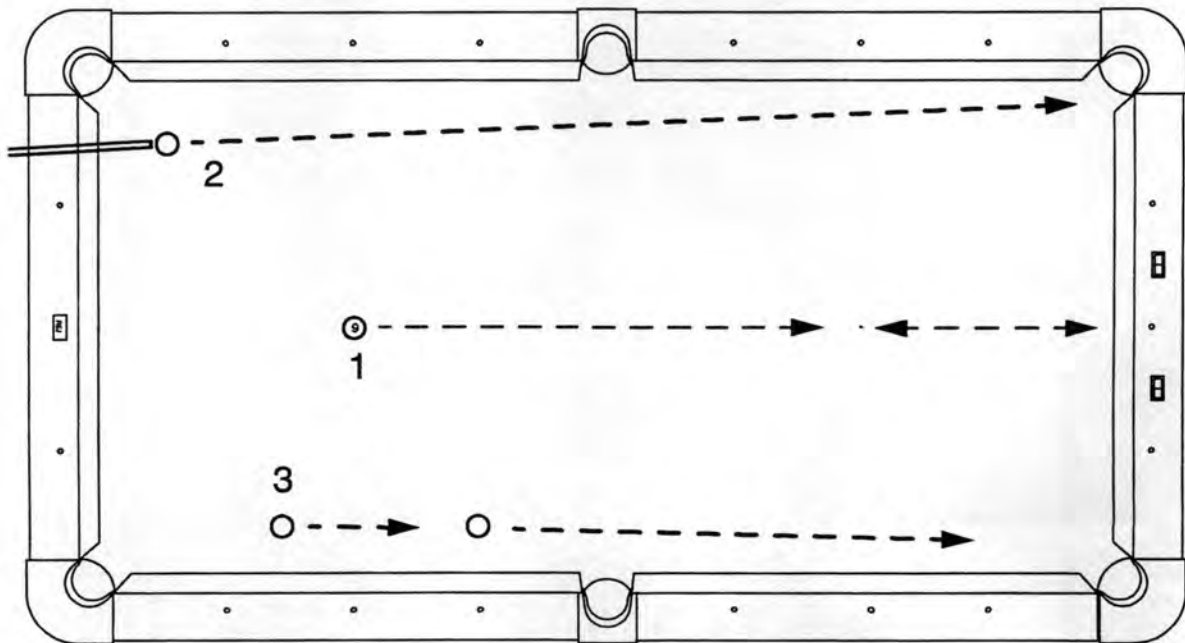
-- After the stroke, your tip should stop about at the second spot.

-- The tip should finish on the cloth showing that the elbow has not dropped.

Repeat this drill until the motion feels natural and all of the requirements are satisfied. Do you finish even with the second spot? Does the tip stay down? Are you accurately pocketing each ball in the center of the far pocket?

3. **Standard cueing drill.** In this drill, you will shoot normal shots, but the important things are to notice where the cue tip finishes and to extend the motion of the previous drill. Place marker spots for the cue ball and object ball as shown in the diagram. The shot should be perfectly straight into the far corner pocket. Also place a "finish" marker six inches in front of the cue ball to help measure the length of follow through again. First try the shot with follow. Remember the **stroke** you practiced in the one-handed drill.

Again, repeat the drill until you are satisfied that the mechanics of the stroke are right. After follow is working well, repeat with stop and draw shots, shooting each kind at least ten times. Are you following through six inches to the marker spot?



Video Taping

Video taping techniques

1. The student will shoot a fixed set of shots with ball positions marked by spots on the table.
2. Two to four shots of each position will be taped.
3. The cue ball spot will act as a reference to measure straight follow through.
4. After taping, the following major points are covered:
 - Stance, including head alignment, elbow and forearm
 - Stroke sequence, including pausing and aiming
 - Stroke straightness
 - Stability during the shot
 - Finish

Series of shots

1. Cue ball on the head spot, object ball one diamond from a far pocket and straight in. The shot may be played with stop or draw.
2. Cue ball on the head spot, object ball six inches from a side pocket, not quite straight in. The student is to follow to the rail and come out a foot or so.
3. Shot straight into the side with the cue ball in the middle of the table. The cue ball may be played with draw, stop or follow, depending on the student.
4. Cue ball frozen to the middle of the head rail, object ball near a far corner pocket with a half-ball cut or thinner.



APPENDIX C

*Progressive Practice
Drills*

This appendix covers a type of drill called “progressive practice.” Included are:

1. A column from *Billiards Digest* explaining the method.
2. An explanation of how to use the drills to measure how well someone plays pool.
3. A log sheet to record practice sessions.
4. Five sets of drills of increasing difficulty. These drills were developed by the San Francisco Billiard Academy and have been used extensively in clinics and individual lessons.

Progressive Practice

permits precise pocketing percentage predictions.

By Bob Jewett, originally published in *Billiards Digest*, Dec. 1992

The "progressive practice" method described below has big advantages over standard drills. It automatically adjusts the difficulty of the shots to match your improvement, it lets you measure your percentage for each kind of shot without any bookkeeping, and it allows you to easily compare your performance on a particular table or day with previous practice sessions. It's adaptable to many kinds of aiming and position drills.

Let's start with a draw drill. In figure 1, the object ball is always near the long rail just out of the pocket jaws. Start with the cue ball in position 1, one diamond from the corner. The goal is to draw the cue ball back at least to 1. Each time you get enough draw, move the cue ball a diamond further back. For example, if you make the shot from 1, the next shot is from 2 and you have to draw the cue ball back at least to 2. If you do 2, try 3 next.

When you miss either the shot or the draw, the cue ball goes a diamond closer to the object ball. If you miss at 3, your next shot is from 2. Continue adjusting the distance after each shot until you've pocketed all 15 balls. Note your final position.

Let's grade the result. If you ended at 1 or 2, you get a B for "beginner". A few minutes of instruction from the local pool professor should be beneficial. If you ended between 3 and 5, you get an A for "average." That's enough draw for most draw situations. If you ended between 6 and the end rail, chalk up an E for "enough" for nearly all draw shots.

Because you make each shot a diamond easier or harder if you miss or make the shot, the final position is close to your 50% success point. Shorter distances are better than even money for you, while at longer distances the odds are against you. If you want to know your 50-50 point more accurately, redo the drill starting from your last position but change the distance only 1/4 diamond each time. The smaller changes result in a smaller error in the measurement.

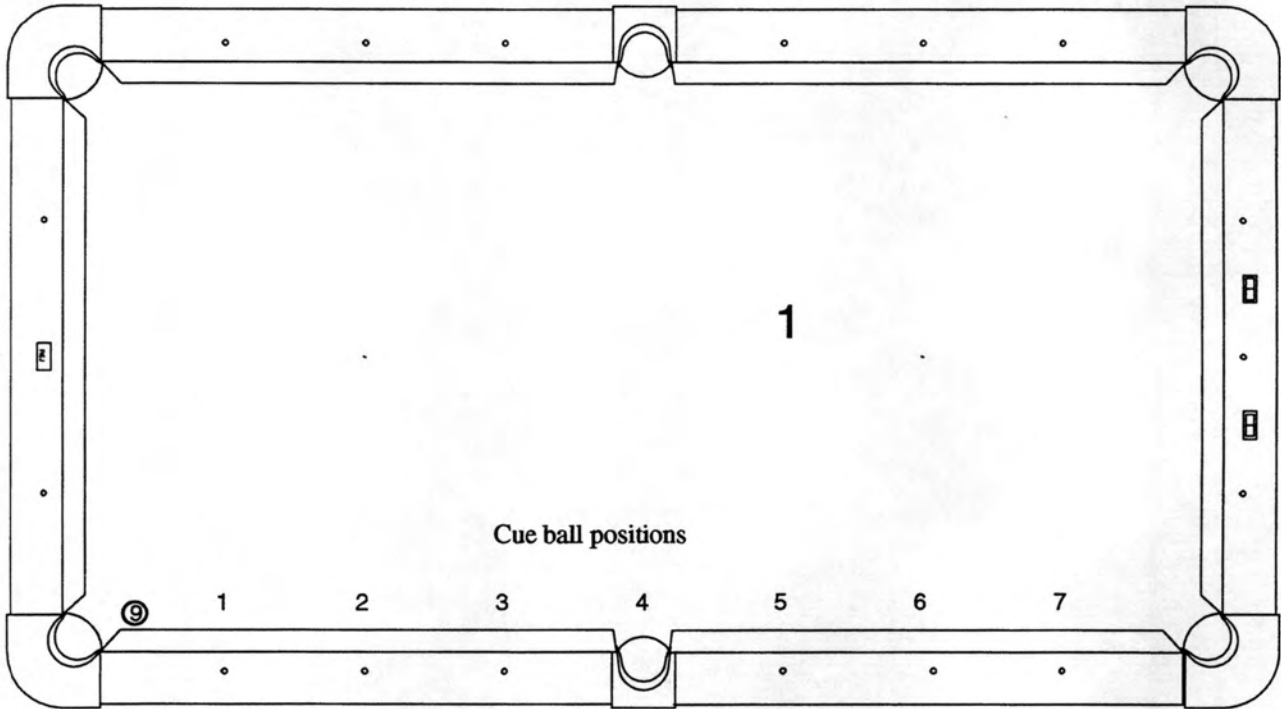
A somewhat easier progressive drill using the same position is a stop shot. The goal is to pocket the object ball and leave the cue ball within a diamond of the pocket. Ideally the cue ball won't move at all after it hits the object ball.

If you need a harder drill, draw the cue back to within a hand span of its starting position. You lose for too much or too little draw or wandering away from the rail. Put your thumb tip on the nose of the rail where the cue started. Your little finger must reach to the cue ball for the shot to be good. Very tough to get to 6.

A pure aiming drill is shown in figure 2. The object ball starts on the spot, and the cue ball is a diamond from the rail. Above average players will be able to turn the corner at position 5. The usual way to practice spot shots is to play from the same position over and over with the dangers of boredom and grooving the aim to a single specific shot. The shots under progressive practice continuously change and force you to aim anew each time.

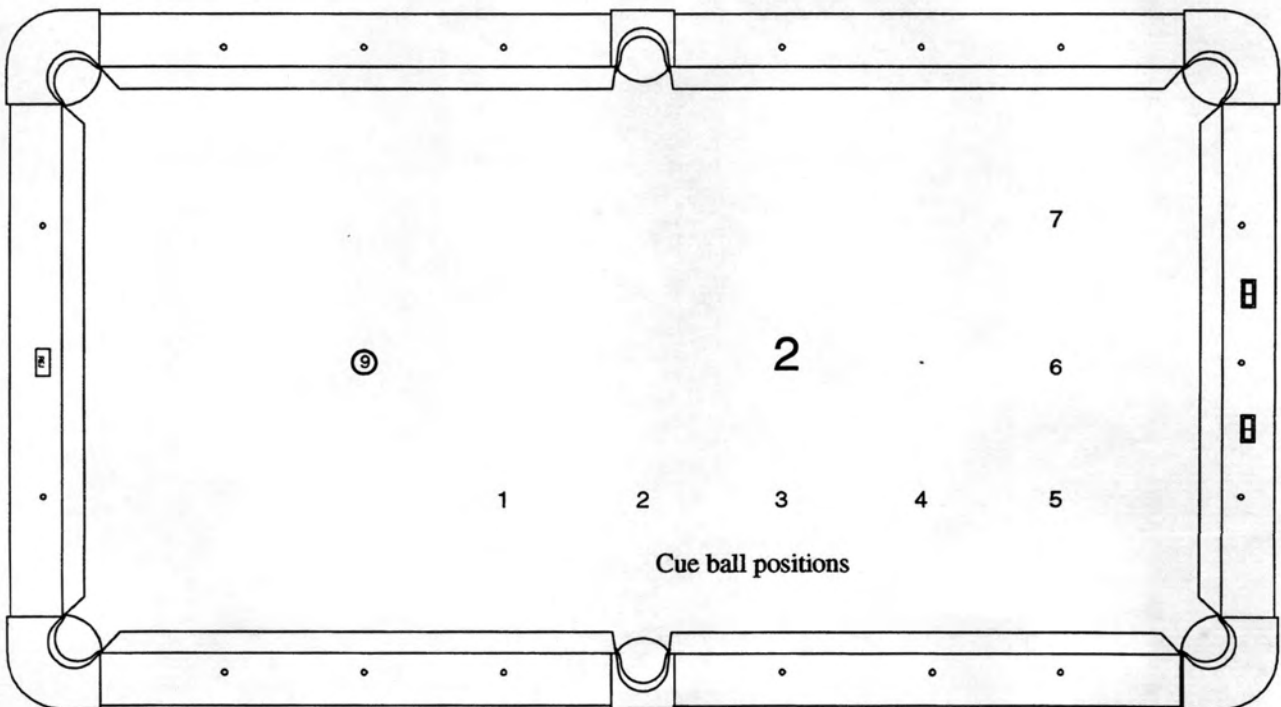
The 50-50 point gives a good mix of challenge and reward which results in rapid improvement, but the system can be modified to find other percentages. To find the point at which you make 2/3 and miss 1/3 of the time, simply make the position two notches easier when you miss and one notch tougher when you make (where a "notch" might be a quarter diamond). When you've settled in on the 67% distance, you'll make two for each one you miss and have no net motion.

While you're at it, don't forget your other side! The draw drill will be extra tough on the side of the table where it requires either a bridge or shooting wrong-handed. Either way, you can find out how much accuracy you lose on your weak side. For the spot shot, there should be very little difference in the two sides. If there is consistently a large difference, there is likely a fundamental flaw in your aiming or stroke and it's time to get back to basics.



Cue ball positions

1 2 3 4 5 6 7



Cue ball positions

1 2 3 4 5 6 7

Using Progressive Practice to Measure Ability

The drills called "Progressive Practice" allow a quick, accurate way to measure the basic pool-playing ability of someone you haven't seen play before.

Read over the explanation of the drills, and try the four drills in Set 1 (1A to 1D) to see how they work. If you get a score of better than 4 on all the drills on one page, go to the next higher set.

When measuring someones ability, don't explain the whole system -- just enough to let them know exactly what has to be done on each shot. Try to start them at a level (1 through 5) that will be appropriate for their ability. If you are unsure of where to start them, begin with the draw shot in Set 2 (shot 2C).

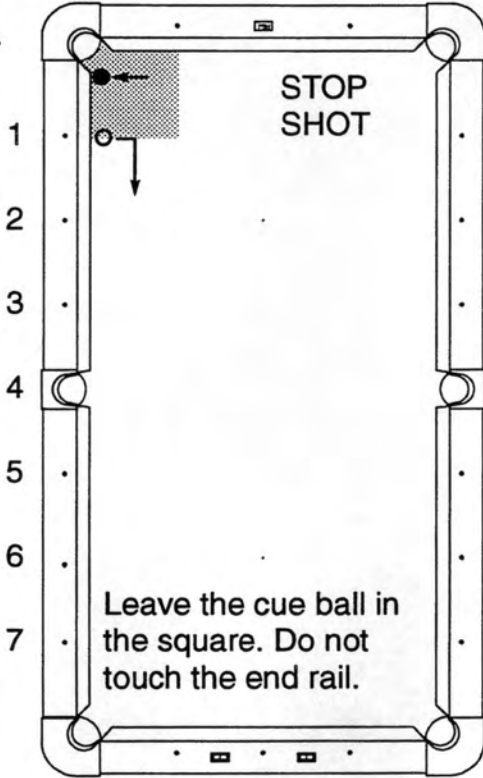
Keep track of the current position with a coin. If they seem to do a shot easily, increase the difficulty a diamond at a time until they miss, then change the adjustment to half a diamond in either direction for a miss or make. Have them shoot a total of 7 times at each drill, or 28 shots for a whole page. If they manage to get a score of 4 or more on every drill, have them do the next harder page, if there's time, since the first page was too easy. If they fail to get even one on any single test, try the next easier level of test.

Record the scores on the log sheet as each diagram is completed

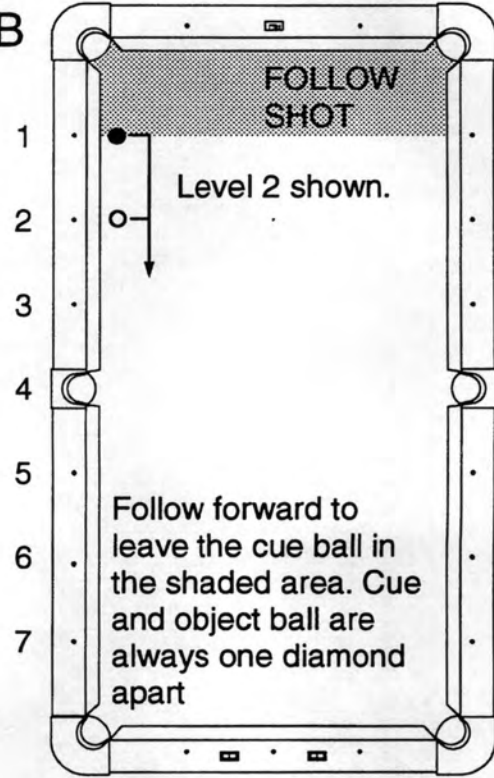
Add up the final positions on the four drills in the set, and multiply by the number of the set to get the total basic ability. For example, if the student does Set 2, and gets scores of 4.5, 4, 2.5, 4, the sum is 15 and the score is $2 \times 15 = 30$.

If the player has already tried a certain level, start them a little below their previous stopping point at that level, and adjust only half or even a quarter diamond at a time. This gives a more accurate measurement of their ability in a limited number of shots.

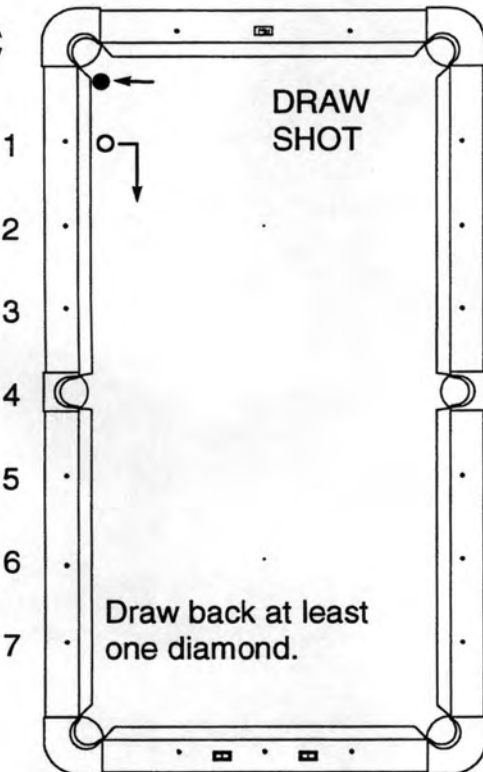
1A



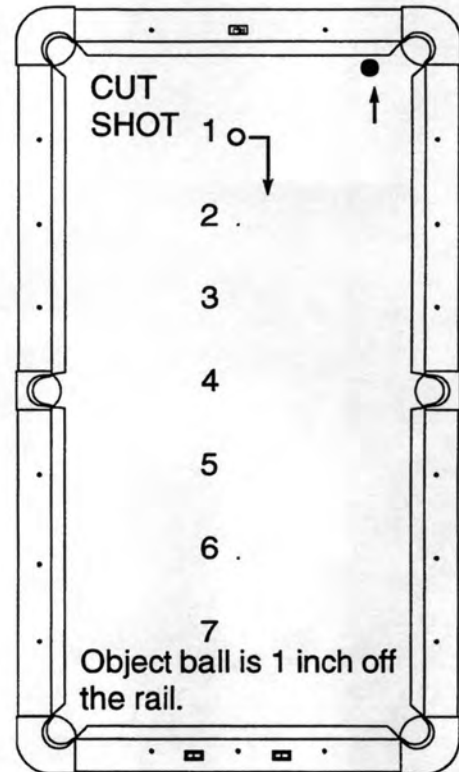
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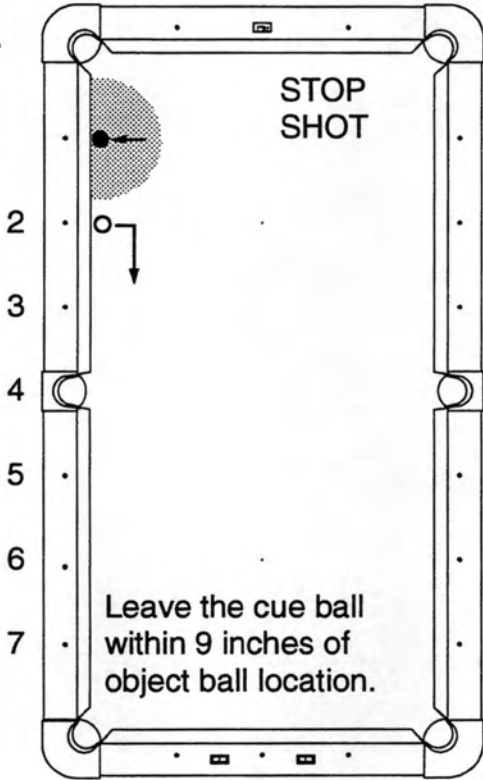
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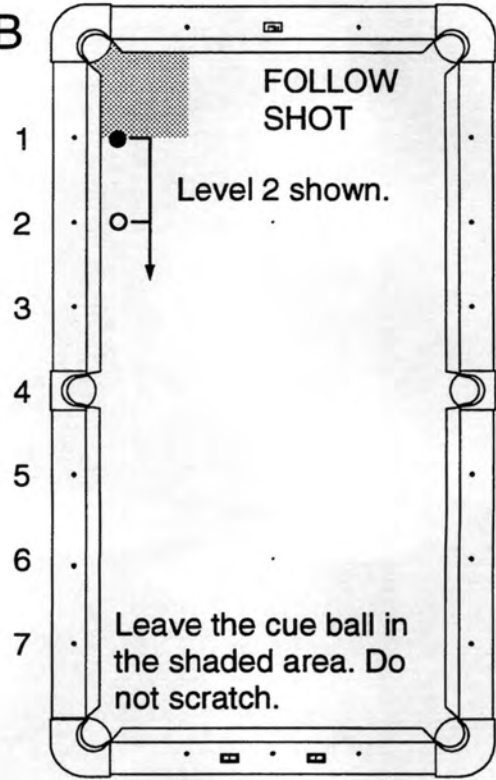
1D



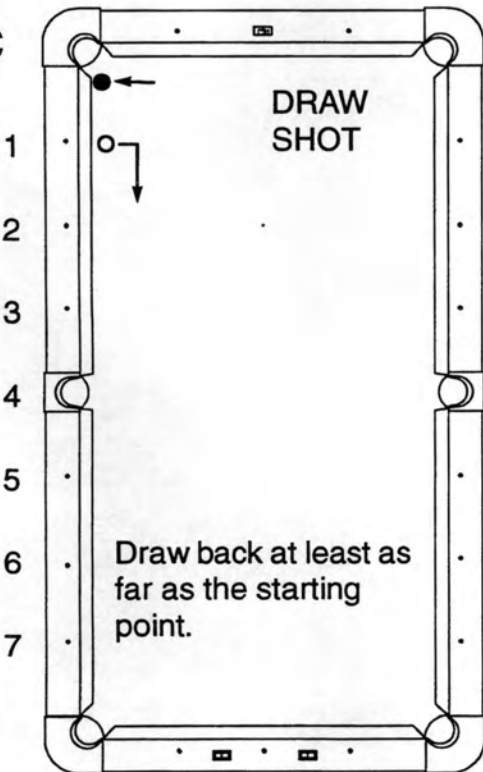
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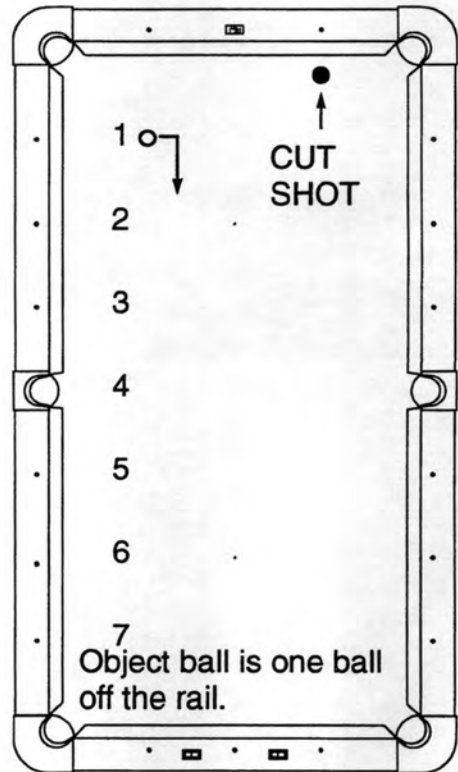
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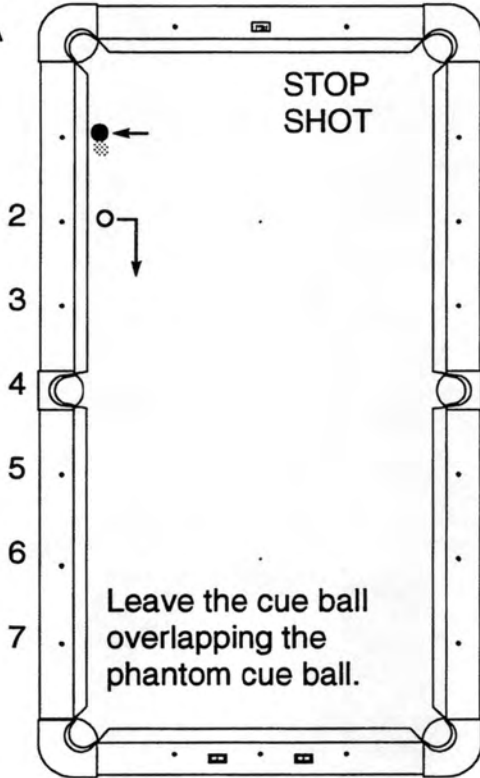
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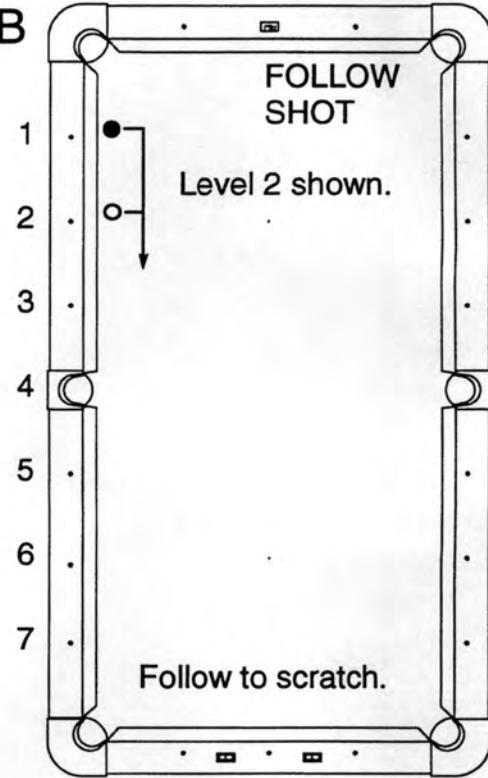
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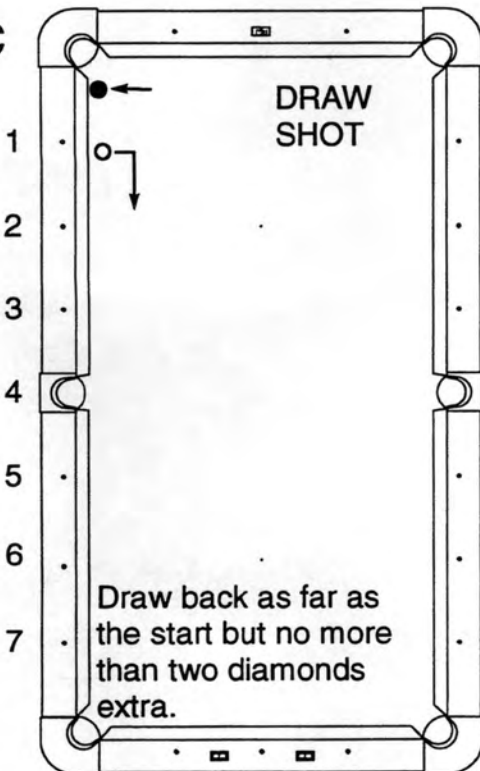
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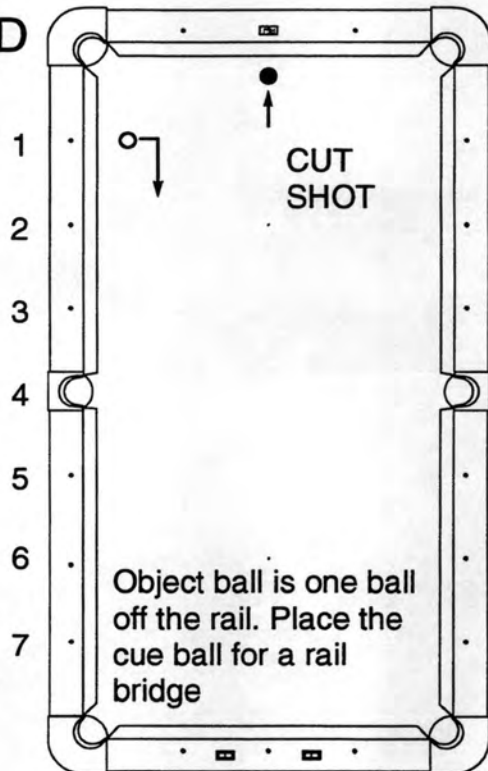
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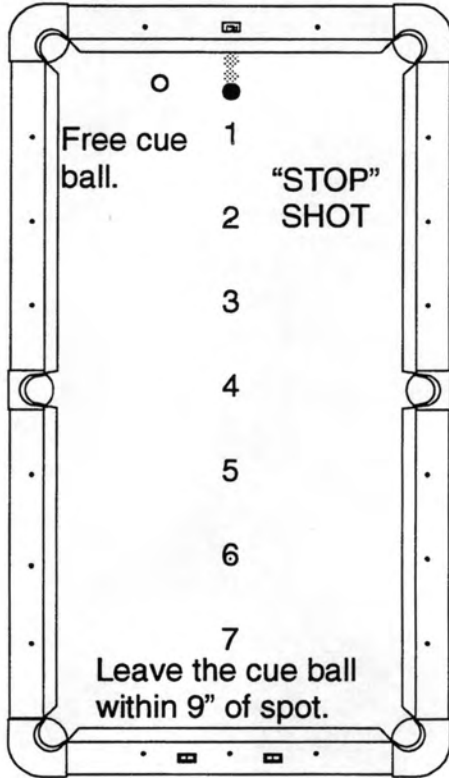
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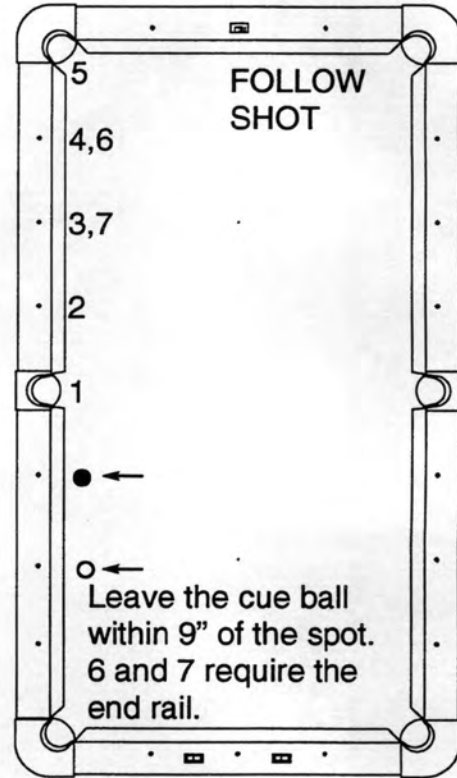
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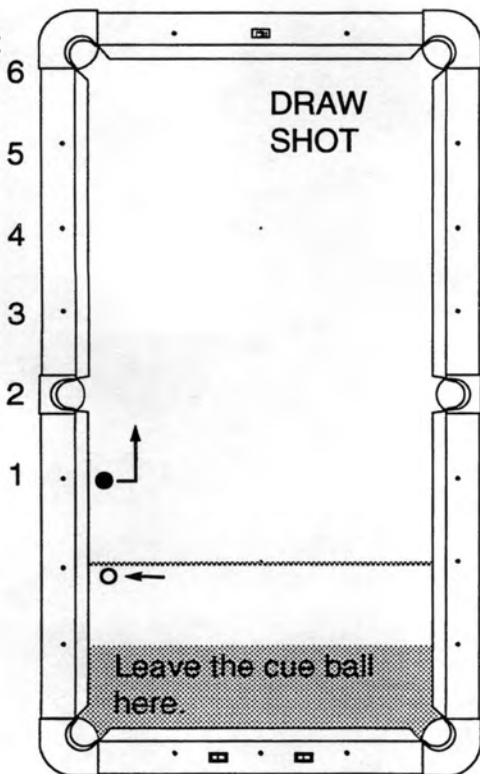
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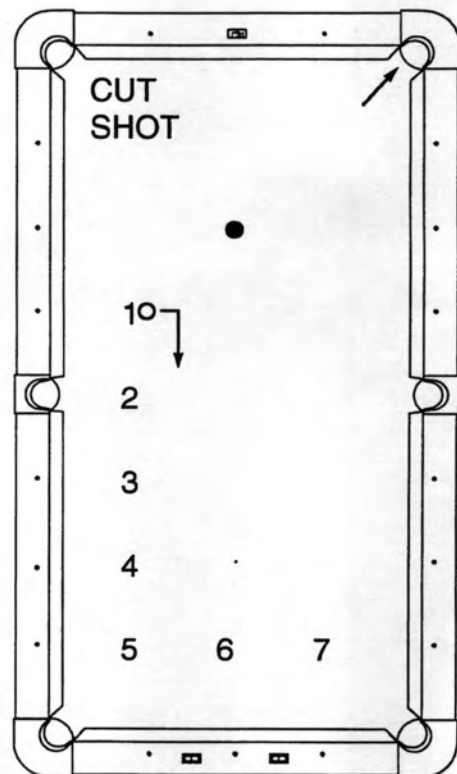
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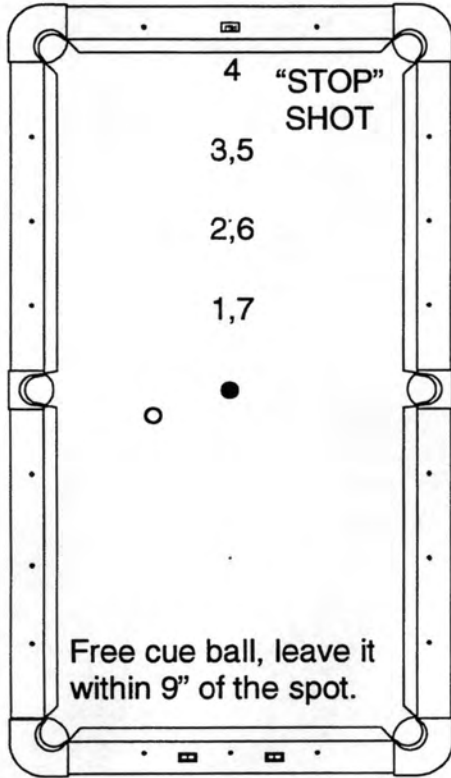
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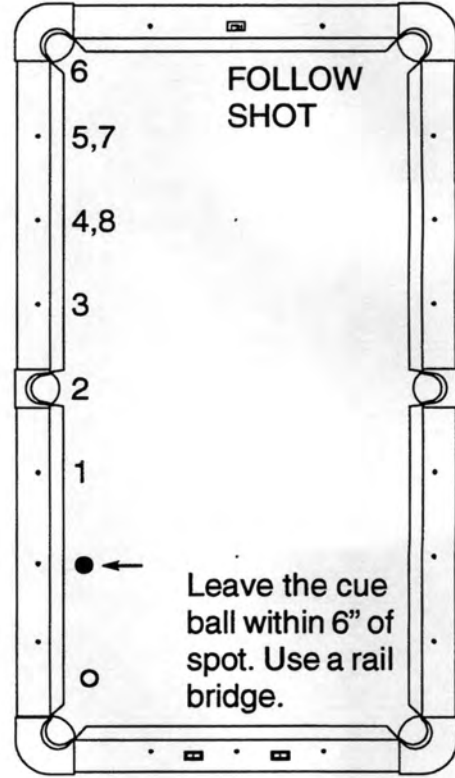
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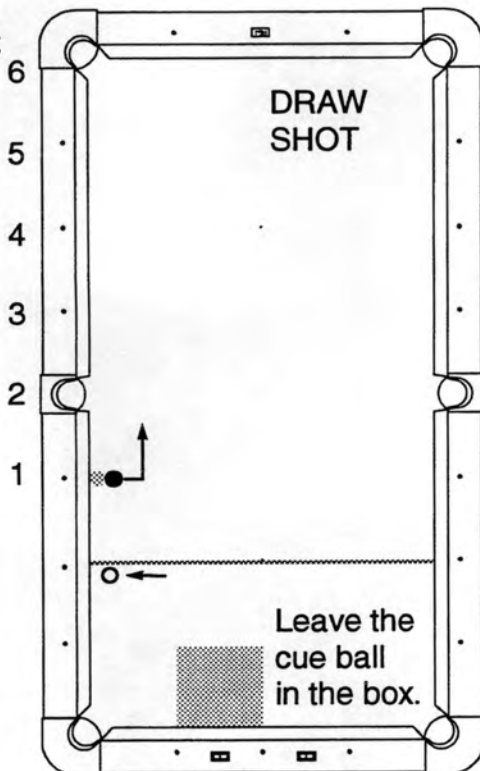
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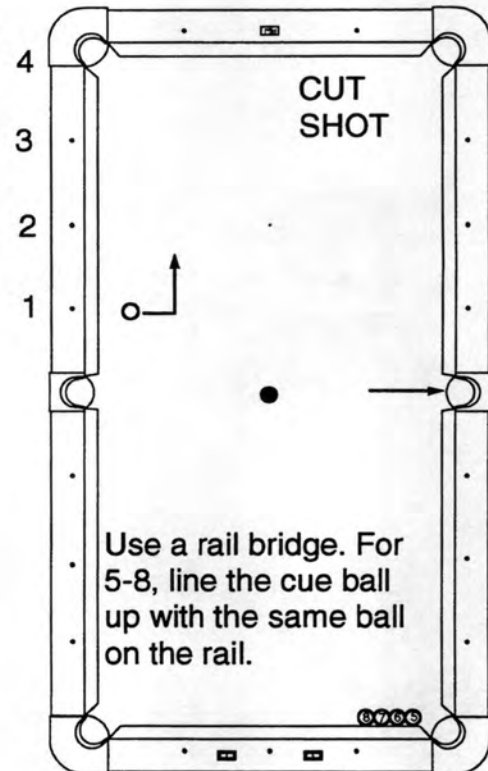
5B



5C



5D





APPENDIX D

Five Minute Lessons

This appendix contains several short subjects that can be introduced as appropriate during a teaching session to cover specific problems or questions that the student might have. It includes:

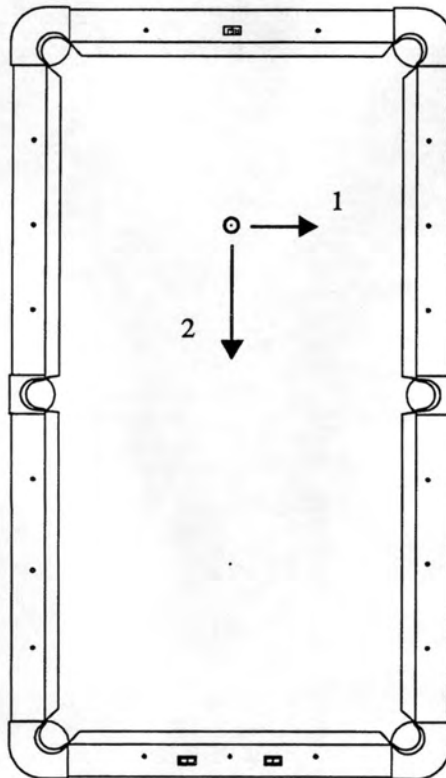
1. Back to the tip -- "over the spots" but no standing up.
2. Softly to the side -- for the student with only "full" speed.
3. Watch that tip! -- an exception to "object ball last".
4. Soft kicks only, hard kicks only -- learn the rails.
5. No fiddling -- a way to focus on hit, english, and speed.
6. "Zen" draw -- eliminate all motion except the essential.
7. Maximum soft draw -- an objective test of spin/speed ratio.

Back to the Tip Drill

Place the cue ball on the spot. Have the student shoot the cue ball directly to the side rail to return to hit the tip. They should use center ball. After slow speed is mastered, have them shoot harder. After the short dimension is mastered, have them shoot the long way so the ball will travel a total of twelve diamonds. This drill can be done by two students on the same table if they are not shooting along the same line.

Several points are learned:

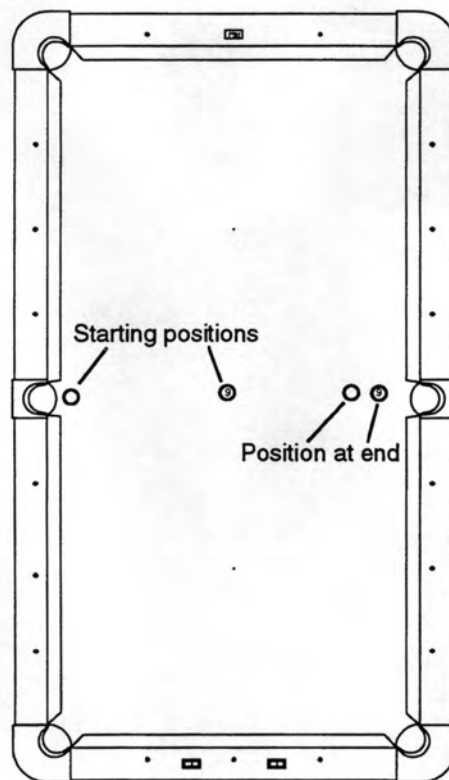
1. True cueing -- if they get any english the cue ball won't come back to the tip.
2. Staying down -- the cue tip must remain in place for the ball to come back to.
3. Accurate sighting.



Softly to the Side Drill

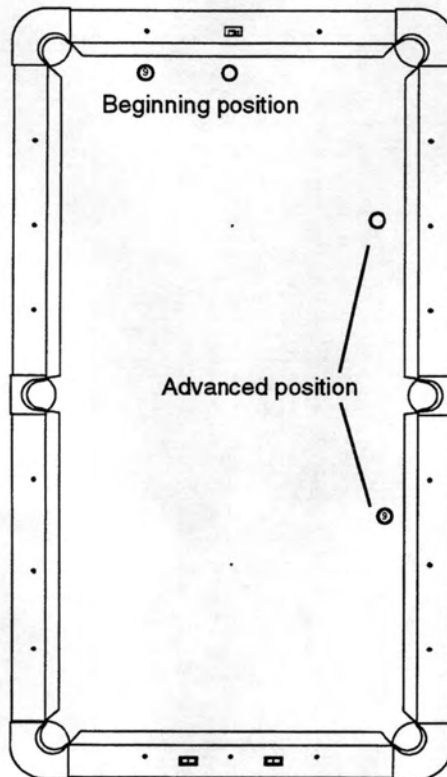
This drill is especially good for students who only have one speed -- as hard as possible. It was suggested by Advanced Instructor Ed Nagel.

Place an object ball on the center spot and the cue ball near the jaws of a side pocket. The goal is to shoot the ball in the opposite side pocket, but to take at least four strokes to do it. On each shot, the cue ball should contact the object ball nearly full and drive it towards the far side. The cue ball and object ball are left in position after each shot. Ideally, the object ball will move only an inch or two on each stroke -- there is no requirement to hit a rail, in fact it must not.



“Watch That Tip” Drill

The student is usually advised to look at the object ball last. In this drill, they should be looking at their tip during the final stroke. This encourages follow through and accurate cueing since there is immediate feedback on any failure. This is best done as part of a progressive practice drill, beginning with very short straight-in shots and moving on to longer shots and eventually cut shots and english shots.



Kicks Only Drill

This drill give some intense practice on hitting a ball on one or more rails. Only the cue ball and one object ball are use

Hard kicks: The cue ball must hit one or more rails and then the object ball. The object ball must then hit a rail. Each shot is played from the leave of the previous shot. If the object ball is pocketed, it spots. Variations are to require two or three rails. This is a good way to introduce various diamond systems.

Soft kicks: The same as above, except that the object ball must not hit a rail after the cue ball hits it.

No Fiddling Drill

This drill also works by a change of the standard stroke sequence. Instead of the normal back-and-forth warm-up motions of the shooting sequence, the student should only adjust the location of their bridge hand and back hand to bring the cue stick to the position it needs to be in when it hits the object ball. There is then a single stroke, back and through, to complete the shot.

During the initial part of the shot, stress the points that the student is supposed to be considering:

- Firm bridge
- Sighting
- Correct place to hit on the cue ball
- Correct body alignment (since there is no warm-up motion, this is easier to check)
- The necessary speed for position
- The length of the final follow through

Once the student is set, there should be just the back and through motion.

Zen Draw Drill

In this drill, the emphasis is on no motion but that required to accomplish the shot. It is especially good for students who have a difficult time getting any draw, since it almost forces them to hit the ball low. Also, it is a good way to introduce a closed bridge.

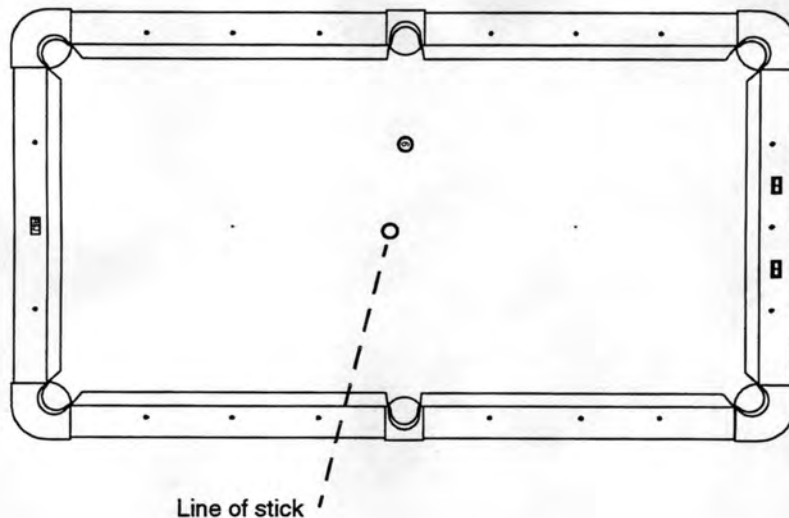
Place the object ball and the cue ball as shown. The cue ball is just above or below the center spot and the object ball is a diamond away from the side pocket. A slight angle is needed so the cue ball doesn't come straight back into the stick.

Have the student use a fist bridge. If the knuckles are flat on the cloth like they're supposed to be, the bridge will need to be only six inches or so from the cue ball, or a miscue will result.

The cue stick must be as level as possible -- only an inch or so above the top of the rail. Any higher, and a miscue will result.

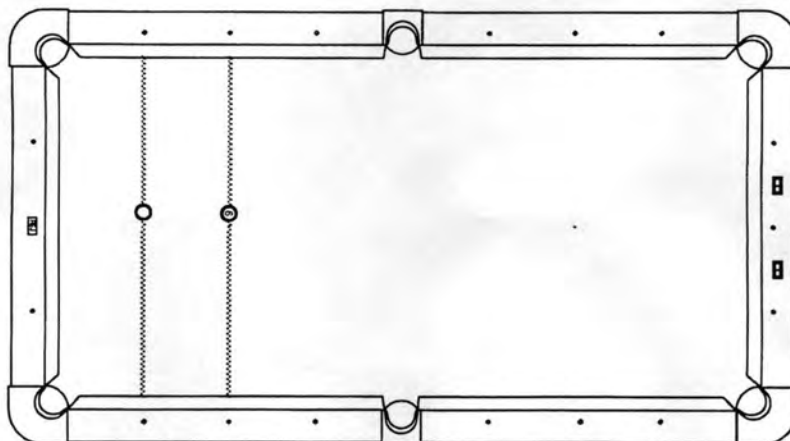
The goal of the shot is to pocket the ball in the side and draw the cue ball back to the rail. The cue stick should be left extended to the full follow through; it should not be pulled back.

Now for the hard part: the student is not permitted to move anything but the stroking forearm until the shot is over. That means they can't turn their head to look at the cue ball hit the rail, or stand up, or even rail or open their bridge. Only the forearm is allowed to move.



Soft Maximum Draw

Here is a test to see if you are hitting as low as possible for draw:



Place an object ball on the line, and the cue ball a diamond away from it as shown. Shoot the ball straight up the table with your best soft draw. On most tables, you can draw the cue ball back to the head rail without the object ball touching the same rail (the cue ball draws two diamonds while the object ball travels less than 14 diamonds).

Here are several things you might want to work on if this doesn't work.

1. Do you have a firm bridge? Does the stroke come through levelly?
2. Is the tip well chalked?
3. Try a different cue. Many house sticks, if properly tipped, are better than some jointed cues.
4. After the tip is well chalked, hit the cue ball lower. You should *expect* to miscue at least a tenth of the time when first attempting this test or you aren't learning how low you can hit the cue ball. Learn how to care for your tip after a miscue.
5. Make sure that the cue ball and the object ball are the same weight. Many cue balls are light -- that's cheating. Some of them are heavier than the object balls -- that's impossible. You can use two object balls but switch them to make sure one's not lighter.
6. Clean the cloth and balls. Dirt destroys draw. For some fun, wax the cue ball.