

EO 5427

BILLIARDS:

THE STROKES OF THE GAME.

PART III.

(COPYRIGHT.)

BY

RISO LEVI.

Cleopatra : Give me some music ; music, moody food
of us that trade in love.

Attend. : The music, ho !

Cleopatra : Let it alone ; let us to billiards.

—*Shakespeare.*

422 ILLUSTRATIONS.

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PREFACE.

THE present volume completes my treatise on the game, and whatever its faults and shortcomings, its errors and imperfections—and no one is more conscious of them than I am—I think it will be granted that my work shows an earnest endeavour to describe the game from beginning to end so far as I know it myself.

When, nine years ago, I commenced *BILLIARDS: THE STROKES OF THE GAME*, no treatise on billiards existed which in my opinion was sufficiently exhaustive. *BADMINTON BILLIARDS*, which was published in 1896, is an excellent work, but it has no pretensions to being at all complete. Indeed, as the first hundred pages or so are devoted to the history of the game and the implements required for play, and the last eighty to the rules of the game, to pyramids, various kinds of pool, and other matters not connected with the actual playing of strokes at the table, very little more than half of the volume is given to billiard instruction. The chapters on the game itself are, however, of a high order, and I am glad to acknowledge here the great assistance which I derived from Major Broadfoot's work in my early billiard days. With just a few exceptions, all other books on billiards which I have read are in my opinion very indifferent, and some are quite worthless. In addition to being very scrappy and incomplete, many are badly written and hideously ungrammatical.

When, by means of constant practice and by playing with better players than myself, I had progressed sufficiently to make an occasional three-figure break, I had learnt so many things, which, though known to all good players, were not to be found in any book on the game, that I decided to write a treatise which, by containing every little point of information about the game which I had acquired in many years, would prove of real assistance to every serious student of billiards. In fact, I made up my mind to write the very kind of book which I would have liked to find in my own early days. Had I then known how ambitious a task I was undertaking, had I known the years of labour it would entail, I might have hesitated before beginning. Now my work is finished. I lay down my pen because a treatise on the game cannot go on indefinitely. *BILLIARDS: THE STROKES OF THE GAME*, with its eight hundred pages and one thousand illustrations, is far more comprehensive and exhaustive than any other work on the game which has hitherto been published.* Every branch of the game has

*In most billiard books each diagram generally occupies a full page. Had the diagrams in *BILLIARDS: THE STROKES OF THE GAME* been on this scale and had the setting of the letterpress been as in other books this treatise would have run to some 2500 pages.

analysed and fully discussed herein, and the work contains a great number of strokes and many important matters connected with the game which, though known to all really good players, are not to be found in any other billiard book. As, however, there is no end to billiards, no work on the game can be absolutely exhaustive, and consequently I make no claim to finality.

I have been the first to go at all fully into the question of transmitted side. Most writers have avoided this subject altogether. Two or three have given it a very short notice, evidently agreeing with Major Broadfoot's witty remark that those who have dealt with side most briefly have probably made the fewest mistakes. That Major Broadfoot really avoided the question himself will be seen from the following quotation from his book :—

"Such transmitted side is no doubt very small and difficult to perceive, save in the matter of results which cannot otherwise be accounted for. . . . The subject is undoubtedly complicated, and the suggestions here offered may be wrong; they are those which, after much consideration, have commended themselves as most in agreement with known facts concerning the rotation of bodies, and as accounting for the behaviour of billiard balls in a manner which is not repugnant to common sense. Nevertheless it must be admitted that absolute proof of transmitted side can scarcely be said to exist that many experienced persons deny its existence, and, moreover, it is never safe to jump to conclusions."

Clearly, Major Broadfoot, though undoubtedly convinced that the cue ball may transmit a very small amount of side to an object ball, lacked the courage to commit himself definitely when, according to his own words, so many players of experience denied the existence of transmitted side.

Some years ago I was strongly of the opinion that the cue ball could not transmit side to an object ball, and in a series of articles which appeared in "The New World of Billiards" I did my best to uphold this contention. Since then, as the result of many very careful and elaborate tests, I have come to the conclusion that I was wrong, and that in certain strokes the cue ball does transmit a minute quantity of side to the object ball. The whole subject is fully discussed in the last chapter of this volume. Whether my contentions are right or wrong, it must be conceded that I have had the courage to set down my convictions in black upon white, and to give what appear to me to be cogent reasons for arriving at these conclusions.

I have also been the first to go fully into the question of cushion-imparted side. Indeed, so far as I am aware, the only other English writer who makes any reference whatever to it is Major Broadfoot, and that he knew little or nothing about it at the time he wrote *BADMINTON BILLIARDS* is proved by his own admissions in the following paragraph from his work :—

"There are, however, certain other matters connected with rotation which, though not so important as what has already been explained as far as the game of billiards is concerned, are yet of considerable interest, partly as they affect the game but chiefly in so far as they may add to our knowledge of the various forces which concern a ball in motion. *Amongst these is the side which may be acquired from friction with the cushion.* The probability that such side is so acquired is understood, but the conditions are little known. M. Vignaux remarks that it depends on the angle of impact, on the velocity, and on the strength; and he gives as an example a plain stroke played gently in a corner of the table, when the ball always has a tendency to come off at a diminished angle of reflection, specially when the angle of incidence is about 45° . *The side acquired is probably greatest*

*"when a ball is played along and touching a cushion; if played from baulk up the left cushion the tendency would be for the ball to acquire right side, and up the right cushion left side; but all such strokes are complicated by the much more important friction with the cloth on the bed of the table. It is unnecessary here to speculate further on a matter which so slightly influences the game."**

Clearly the only cushion-imparted side that Major Broadfoot knew anything about—judging by his remarks in the above paragraph—was the side which may be imparted to a ball by friction with a cushion. The amount of side a ball can get by rubbing against a cushion, even along the whole of its length, can never be more than an exceedingly minute quantity, and consequently it is difficult to see how the infinitesimal amount of side which may be imparted by friction along a cushion can be of even the slightest influence in the game, for a ball that runs along a cushion with any speed must catch the angles of a pocket when it does not enter it.

The amount of rotation which may be imparted to a ball when it strikes a resilient cushion at a high speed and at an angle which is not very acute is, however, quite another matter. Such rotation is frequently very considerable indeed, and that this cushion-imparted side—mistaken by many writers and players for transmitted side—is often an important factor in the game, is evidenced by the strokes illustrated on Diagrams 1055, 1056, 1057, 1062, and 1064, in the last chapter of this volume.

I have read many works on billiards, but never one which is devoid of errors, and I am deeply sensible that my own has its mistakes and imperfections. Indeed, if a reprint of the earlier volumes is ever published a number of corrections and alterations will be made. Progress at billiards naturally means the learning of many things, but the *unlearning* of many things previously held to be correct is also essential to advancement in the higher knowledge of the game. Thus, whilst learning much during the nine years which have elapsed since I began this work, I have also had to unlearn much. One illustration of this will perhaps suffice. On page 367 in the chapter on CENTRE-POCKET IN-OFFS, in analysing a run-through stroke I used these words:—

"These partial run-throughs are generally played with check side . . . this causes the ball to run as it were narrower, but the use of side is not by any means essential."

And again, on page 374 in the same chapter, in describing some centre-pocket in-offs which are run-throughs of a very pronounced character, I wrote:—

"These run-through in-offs should be played with check side, as this side helps to make the cue ball run narrow."

Were I to re-write the chapter to-day I would advise good players to use no side when playing run-through centre pocket in-offs from the D, not even when the stroke is of such a nature that the contact with the object ball has to be a very full one in order that this ball be kept near the central line of the table.

Mannock—a great authority on the game—in his book, *BILLIARDS EXPOUNDED*, advises players to use check side for run-throughs into a centre

* The italics in this extract are mine.

pocket, for in treating of the various in-offs from the D into a centre pocket, he

"A good and dependable rule is to use reverse side for the run through, and running side for the thin shots of all varieties."

but George Gray, a much greater authority on centre-pocket in-offs, at which branch of the game he is to-day absolutely unrivalled, advises players to use no side for centre-pocket run-through in-offs from the D. In fact, in his little book, entitled RED-BALL PLAY, he repeatedly warns players against the use of side in these strokes, as evidenced by the following extracts from the description of several of these strokes :—

"In all these run-through strokes the main principles are : Hitting the cue ball well above the centre ; taking care to use no side and making sure that the cue follows freely through the ball."

"Here again no side is most important."

"Side I regard as fatal "

"Side is fatal."

For years I played run-through centre-pocket in-offs, especially the very narrow ones, with check side, but about a year ago I began playing these strokes without side, with very beneficial results.* Check side is of great assistance to many players in these run-throughs, in that it causes the cue ball to run narrower, and it is no doubt for this reason that Mannock counsels its use. These in-offs can, however, be quite easily made without side, therefore if we compare two successful strokes, one played without side and the other with side, the result we arrive at is this : In the one case the contact is correct and the ball travels straight to the pocket, in the other the contact is not quite correct and the cue ball, were it not for the side, would strike the lower angle of the pocket. The side, however, pulls the ball up the table a little, and thus allows it to enter the pocket. The contention that the plain-ball stroke which takes the ball straight to the pocket is a safer and consequently a better one than the check side stroke therefore rests on a sound and logical basis. The great danger in playing these run-through in-offs with check side is that the side may pull the ball too much, or not enough, and, in addition to this, the tendency of this side is to keep the ball out of the pocket should it strike the upper angle.

In the previous volume the question of how far down to his ball a player should get was discussed, and I stated that although it is not absolutely essential that a player should get his head very low down in order to take good aim, there is not the slightest doubt that getting well down to a stroke—when the object ball is a considerable distance away—conduces to good aim. I also drew attention to the fact that Major Fleming, the winner of the amateur championship in 1909, actually touches his cue with his chin, so low does he get down to

*Prior to adopting George Gray's method of playing these strokes my highest red-ball break at the in-off game was 78. I have since twice made a break of 159 entirely by red-ball play, in addition to several others well over a hundred.

his stroke, and that Inman—who has since won the professional championship of England—likewise plays with his head very low down. Both these players have made breaks off the red ball which, in their respective classes, were considered exceptionally large a few years ago, and no doubt their success has been in no small measure due to the the very accurate sighting which a low-down head insures. It is true that the red-ball breaks made by these players sink into utter insignificance when contrasted with the extraordinary performances of George Gray—the billiard wonder of the world—Lindrum, and Smith.* Those who have seen George Gray at the table will, however, no doubt recall to mind how he also lowers his head until his chin is practically touching his cue, and Lindrum and Smith get just as low down to their strokes. It is surely more than a mere coincidence that the great players at the in-off game all sight the object ball in the identical manner, and their colossal breaks would certainly appear to afford striking testimony to the value of getting low down to one's stroke.

Which ball should be looked at last, the cue ball or the object ball? This question was also discussed in the preface to the previous volume, and I stated therein that when the object ball is any considerable distance from the cue ball the eye should most certainly rest on the object ball just previous to, and at the moment of striking the cue ball. Dawson and Harverson have written to the same effect, and until I met George Gray I never knew any player who held a different view. I have discussed the question more than once with the great Australian player, and he maintains that the cue ball should be looked at last, for only in this way can a player be sure of striking his ball centrally, or at least at a point which is very little indeed from the centre. There can be no doubt, however, that the whole question resolves itself into the far more important one of true cueing, *for true cueing is the one great thing in billiards*. If the cueing is faulty in any particular stroke a distant ball will not be taken as intended. For example, if in a plain half-ball stroke the cue is not on the original line of aim—assuming this to have been the correct one—at the moment of its contact with the cue ball the object ball will be taken fuller or thinner than half-ball, notwithstanding that the eye may have rested on it at the moment of striking, and in addition to this, the cue ball will in all probability be struck appreciably away from the centre, with the result that unintentional side will be imparted to it. Looking at the cue ball last will, it is true, prevent or tend to prevent the cue ball's being hit away from the centre, but central hitting of the cue ball

*George Gray during the season 1910-11 made the following breaks: 1,001, 1,024 (twice), 1052, 1,054, 1,058, 1,092, 1,135, 1,140, 1,143 (twice), 1,169, 1,200, 1,201, 1,212, 1,244, 1,278, 1,295, 1,318, 1,340, 1,402, 1,576 and 2,196 unfinished (1,620 off the red). These breaks were compiled practically and in many cases, solely by red-ball play. In addition to the above Gray has up to the present (Sept., 1912), made well over one hundred breaks between 500 and 1,000. Lindrum has also made a large number of breaks over 500 his record off the red being 1,230 in a break of 1,239. W. Smith has so far made breaks of 501, 505, 612 (600 off the red) and 736.

cannot insure correct hitting of the object ball, for here again if the cue at the moment that it strikes the ball is off the original true line of aim the object ball will not be taken as intended. As a matter of fact, if the cueing is faulty the object ball may be taken very badly indeed, notwithstanding that the cue ball may have been struck exactly at the centre, and faulty cueing may just as easily happen whether the cue is moved backwards and forwards once only, as is the case with many players, or half a dozen or more times, as is the case with others. Every player *must* take his aim by looking at the object ball first, and it seems to me a logical enough contention that as correct aim is obtained in the first place by looking at the object ball, it is most likely to be *retained* by looking at it last. Theoretically, of course, if aim is taken through the centre of the cue ball to the edge of the object ball—as it must be in all plain half-ball strokes—it does not matter which ball is looked at last, provided that the cueing is absolutely true. Unfortunately, however, perfect cueing is exceedingly difficult of attainment, and only very few players can justly lay claim to exceeding proficiency in this piston-like movement of the cue. As amateurs in general are more or less faulty in their cueing, anything that tends to keep the cue on the line of aim, or acts as a corrective when the cue is getting out of it, must be to their advantage, and there can be little doubt that if the cue is not moving backwards and forwards truly this looking at the object ball as the cue is moved backwards and forwards for the last time must greatly assist in getting correctly on to the object ball. This last look is in a sense really a *fresh aim* after the first, and maybe a second, third, and fourth one have become more or less lost.

Gray has told me that he always looks at the cue ball last, but one can hardly imagine him playing a grazing stroke off a distant ball without looking at the object ball at the moment of striking. For example, suppose the red is on the spot and the object white is on the top cushion and nearly behind it, but just sufficiently to one side to allow of an extremely thin ball-to-ball cannon being played from the D. It is almost inconceivable that Gray would play this cannon without looking at the red as he struck his ball.

Again, Gray has mastered the extremely difficult art of true cueing to such an exceptional degree that he can hardly be taken as a pattern for the ordinary amateur to follow as regards this question as to whether the cue ball or the object ball should be looked at last. Another point that must not be lost sight of when treating of this question is that it is often possible to look at both balls at the moment of striking, and, in fact, during the whole of the time that cueing takes place. With the object ball not very far from the cue ball, both balls are in the same focus, and when this is the case the eye can simultaneously take in the end of the cue, the centre of the cue ball, and the edge of the object ball—or other parts of the balls if the stroke is not a plain half-ball one. When the end of the cue and both balls can be embraced in the one focus

correct cueing is made very much easier than when this is not the case, because it is quite easy to see whether or not the cue is moving truly on the line of aim. The lower a player gets down to his stroke the farther does he extend the focus which embraces the end of the cue, the cue ball, and the object ball, and consequently the greater are the number of strokes which he can play with his eye on both balls. As previously mentioned, George Gray gets his chin right down to his cue, and consequently he gets into one focus as much of the table as it is possible to get. In nearly every stroke he plays, a large portion of his cue and both balls are in the same vision. In all his centre-pocket in-offs he looks along his cue and sees the object ball and his own ball in the same glance from beginning to end of the stroke. The same applies, too, to his top-pocket in-offs in the course of a break off the red, for when by reason of his not having brought the ball far enough down the table for a centre-pocket in-off he has to play for one of the top pockets, the ball is almost invariably only an inch or two beyond the zone for centre-pocket in-offs.

When, however, Gray has to play a long-distance stroke, say an in-off from the D with the object ball not far from the top cushion, the case is different. I have watched his play more than thirty times, and sitting facing him when playing from the D I have carefully observed his action in long-distance strokes, and have invariably noticed a swift uplifting of the eyes—though no doubt an unconscious one—at the moment of striking his ball. During the last three years I have also at one time or another witnessed practically every professional of note at play, and in every case I have noted this swift upraising of the eyes to a distant object ball at the moment of striking the cue ball.

In order to perfect his cueing, George Gray has for years constantly practised and still practises sending a ball straight up and down the table. Unless the ball is struck quite centrally it cannot return over the line of its outward journey; more especially is this the case when the stroke is played with plenty of pace, for when a ball is hit either to the right or the left of the centre a strong stroke will impart a considerable amount of spin to it, even though it may not have been hit very far from the centre. Parenthetically it may be remarked that there is no finer practice than this hitting of a ball up and down the table at all speeds, and any player who can time after time hit a ball with plenty of strength and at the same time so near its centre that its line of return very nearly coincides with, or at least does not diverge much from its path up the table, can cue very well indeed. When we discussed this question as to which ball should be looked at last, Gray cited this practice stroke of sending a ball up and down the table without side. In this stroke it is perfectly true that the cue ball must be looked at last, in fact, it should be looked at all the time in order to insure something like central hitting. This stroke cannot, however, be considered analogous to, say, a plain half-ball top-pocket in-off, for although

in such a stroke, the cue ball should be struck as centrally as possible—that is, neither to the right nor the left of its centre—the thing of paramount importance in the stroke is a good contact with the object ball. In the up-and-down-the-table stroke, on the other hand, the paramount factor, and indeed it may be said the sole factor, in the success of the stroke is the central hitting of the ball. For example, if the cue ball is placed on the centre of the D line it must travel over the centre, pyramid, and billiard spots in order that it may travel back to baulk over the line of its outward path. If, however, through very incorrect aim the ball strikes the top cushion at a point which is, say, a quarter of an inch to the right or the left of the central line of the table, its line of return, provided that it has been struck absolutely at the centre, must very nearly coincide with its path up the table, because it would cross the baulk line only half an inch to the right or the left of its starting point. Such a stroke would thus appear to be a very perfect one. The same faulty alignment of cue at the moment of striking would, in the case of an in-off with the object ball some little distance from the pocket, inevitably cause the stroke to be badly missed. That correct hitting of the object ball in strokes which should be played without side is of far more importance than correct hitting of the cue ball is proved by the good breaks off the red ball which are occasionally made by amateurs. An amateur who makes a three-figure break by red-ball play has almost invariably to play a considerable number of long top-pocket in-offs during the course of the break. The majority if not all of these strokes are played as plain-ball strokes, yet in very few, perhaps not even in one of them, is the cue ball hit exactly on its central line. Nevertheless, the ball finds the pocket by reason of its contact with the red having been a good one.

Which are the better for good play, ivory or composition balls? This is a question on which players are greatly divided. If ivory balls are true there is little to choose between them as regards the general playing of the game, though composition balls, with their wider throw-off angle, are undoubtedly better for red-ball play by reason of the positions which so often occur in any big break off the red from which a centre-pocket in-off is quite easily on with composition balls—particularly with bonzoline balls—by means of an ordinary running-side stroke, though just not on with ivory balls by the same kind of stroke. Unfortunately, however, ivory balls which have been in use for any length of time seldom run true, and in most billiard rooms wherein composition balls have not yet displaced ivories sustained good play is quite impossible by reason of the foul running of the cue ball in slow long-distance strokes. This being so, how is it that so many good amateurs still prefer ivory balls—even though the sets with which they play may be more or less unreliable—to true-running composition balls? It can only be

PREFACE.

because they are prejudiced against composition balls. Take the case of an amateur who has played for ten or twenty years with ivory balls. One day he plays a game or two with bonzoline balls. By reason of the altered angles for in-offs and of the slightly different way in which many run-throughs and screws must be played with these balls as contrasted with ivories, he fails to score from many positions in which in the ordinary way he would regard the shot as a certainty. The failures at shots which result from bad strokes he also puts down to the balls, quite overlooking the fact that he does not get every stroke he plays for even when using ivory balls. Because he cannot play his game the first day he uses bonzoline balls he refuses to play with them any longer and goes back to ivories. Players of this class maintain that there is no life or elasticity in bonzoline balls, that they are heavy and dead, that they throw an unnatural angle, and that run-throughs are far more difficult with these balls than with ivories. What is meant by life in a ball I have never been able to understand, nor have I ever been able to find any player who speaks of the life in an ivory ball who can explain what he means by the term. He knows himself what life in a ball is, but cannot convey this knowledge to anyone else, nor can he adduce one single argument in favour of his contention that this life which he claims for an ivory ball makes this ball better for billiards than a bonzoline or crystalate ball. He will maintain that a run-through stroke is easier with ivory balls than with composition balls. So it is for him, because he plays with ivory balls, but he cannot set up any position on the table from which he can score by means of a run-through stroke that an equally capable player who is used to composition balls cannot score from with these balls with equal facility by means of the same kind of stroke. In most run-through strokes the object ball has to be taken slightly fuller with composition balls than with ivory balls, but to the player who is used to composition balls run-throughs are no more difficult than they are to the player who plays with ivory balls.

The term elasticity, as applied to billiard balls, is a somewhat vague one. Ivory balls are probably more compressible than composition balls, and if this is so more compression must take place at the point of contact with the former balls in all strong strokes than with the latter—the red disc which is often seen on a white ivory ball, and which results from a forcible contact of this ball with the red, affords by its size conclusive proof of the relatively considerable amount of compression at the meeting surfaces of the balls which must have taken place at the moment of contact. Judged by compressibility, therefore, it may be that ivory balls are more elastic than composition ones. If, however, elasticity is judged by the rebound of one ball off another on a billiard table, then a composition ball—especially a bonzoline ball—is more elastic than an ivory one in that its angle of rebound or deviation from

the line of aim in a plain half-ball stroke is greater than that of an average ivory

regard to the weight of balls, it is a common fallacy to suppose that composition balls are much heavier than ivory balls. Given balls of the same size, bonzoline, crystalate, and good ivory balls are of practically the same weight.

With regard to the assertion so often made by users of ivory balls that bonzolines throw an unnatural angle, it seems hardly necessary to state that there is absolutely no justification for such a contention. As well might the bonzoline players assert that ivory balls throw an unnatural angle. The fact of the matter is that there never was and never can be such a thing as a standard angle for an ordinary half-ball stroke. Balls made of different substances throw different angles, and if for the sake of experiment balls made of box-wood, ebony, vulcanite, copper, steel, etc., were tested, it would probably be found that the half-ball angle—which is the natural angle—was different in each case. Even with ivory balls a certain amount of difference as regards the throw-off angle often exists, and in extreme cases this difference may be very marked indeed. Professionals often describe a particular set of ivories as narrow-angle or wide-angle balls, as the case may be. This variation in the throw-off angle of different ivory balls is due to some difference in the specific gravity, elasticity, etc., of the ivory out of which the balls have been turned.

During the last two or three years the question has often been raised as to whether George Gray would ever have made a four-figure break had he always played with ivory balls, and the players who will not touch a composition ball are generally of the opinion that he would not, and yet in the same breath they will maintain that ivory balls are ever so much better than composition balls. If, however, an unbiased view is taken of the matter the only conclusion that we can come to is that Gray would have made many four-figure breaks with ivory balls had he played with them as continuously as he did with crystalate balls. If proof were needed that composition balls are not essential for great breaks off one ball, it is afforded by the red-ball break of 453 on a standard table with ivory balls, made this year (1912) by Henry Taylor, a fifteen-year-old Leeds boy. Who shall say that this boy—to-day practically unknown to the world—who has already quite eclipsed the ivory in-off breaks of every one of our English professional players, will not some day be making four-figure breaks with ivory balls if he continues to use them in the future?

It needs no prophetic nature to foretell that in the near future the ivory ball must inevitably give way to the composition ball. Prejudice always dies hard,

*If elasticity is measured by the width of the throw-off angle then steel balls are far more elastic than ivory or composition balls. Using 2-inch solid steel balls I have found that with one ball on the centre spot the plain half-ball angle for a top-pocket in-off is formed by placing the other on the extreme end of the D line. It is quite possible too that with balls made of some other metal or substance the half-ball throw-off angle may be still wider than that of steel balls.

but already the ivory ball has lost a large part of its supremacy. In India and Australia the composition ball holds full sway, and the same is true of more than one English county. Throughout the kingdom, too, large billiard halls have been erected during the last few years, and in these halls the composition ball, by reason of its relatively low cost and its great lasting qualities, has entirely supplanted the ivory ball. Thus new generations of players are rising up who know not the ivory ball.

The manufacturers of composition balls have for many years paid large sums to professionals in order that by being used in their games these balls might be brought into prominent notice. Now that composition balls are so well known it is very questionable whether the makers are not defeating their own ends by continuing to pay for their use in matches. So long as professionals receive pay for playing with composition balls so long will they refuse to play with them without payment.*

I have often been asked by readers of my books what other works on the game I would recommend them to buy, and in reply to their letters I have named those which in my opinion are the best. Before giving here the titles of a few books which I would advise billiard players to read, I cannot resist referring to the strange jealousy with which many professionals view works written by amateurs. Some years ago I gave a great English professional a copy of my first volume, and meeting him some days later I asked him—after he had told me that he had looked through it—what he thought of it. He replied:—

“I would rather not say as I am shortly going to publish a book myself.”

This great player evidently thought that had he made any complimentary remark his words would have been advertised in the press, and that any favour accorded to my book would militate against the success of his own. He little knew that a successful work must help all others of the same nature. The man who buys a book and receives some benefit from it is ready to buy another and another. It is the man who has bought one or two books which have proved useless to him who is chary of purchasing any more.

One more incident:—

A friend of mine asked another well-known professional what he thought of **BILLIARDS: THE STROKES OF THE GAME**. The professional answered:—

“It's no good,”

and then in the same breath this foolish man added:—

“It's practically a copy of my book.”

The two works which I would advise players to read, not once but several times, are **BILLIARDS EXPOUNDED**, by Mannoek (two vols.), and **BADMINTON BILLIARDS**, by Major Broadfoot and others.

*Some few years ago I asked a well-known English professional which he preferred: ivories or bonzelines. He unhesitatingly answered: “Bonzelines.” His answer raised the question as to why he did not always use bonzelines in his matches and exhibition games. He replied: “What! Play with bonzelines without being paid for it. Not me! If I once played with them from choice I should never get another penny out of them.”

To those students of the game who care for the mathematical side of billiards, Colonel C. M. Western's book, *THE PRACTICAL SCIENCE OF BILLIARDS*, will be found of absorbing interest, but in order to be able to fully appreciate the value of this work the reader must have a pretty good knowledge of the higher mathematics, including trigonometry.

Another book which is devoted to the mathematics of billiards is *BILLIARDS MATHEMATICALLY TREATED*, by G. W. Hemming, K.C., but this is a still more abstruse work than Colonel C. M. Western's, and is consequently only of value to mathematicians of the very highest order.

The above-mentioned treatises on the game are selected only from the works in my possession. My billiard library is, however, by no means complete, and doubtless there are works of merit which are missing from it. The earnest student of the game profits from the reading of many books, for most of them will teach him something. The more comprehensive ones should be read not once but many times, for the mass of information which they contain cannot be digested and assimilated in a single reading.

To the hosts of correspondents who have written me—from far-off climes as well as from our home lands—in appreciation of my work, I once again tender my sincerest thanks, and should the present volume also prove of interest and assistance to my readers, my efforts to advance the great game have been amply rewarded.

RISO LEVI.

The measurements given under the various diagrams are—unless specifically stated otherwise—from the edge of the balls at half their height from the bed of the table.

CHAPTER XXIX.

SCREW CANNONS FROM THE D.

Often, when playing from the D, the only stroke to play is a screw cannon, or the position may be such that although some other stroke may be on, a screw cannon is the best stroke to play, or if not the best for a really good player the screw may be the safest stroke for the moderate player to attempt. A few typical examples of such strokes, and the best way of playing them, will therefore be described in this chapter.

Diagram 645 illustrates a position that not unfrequently occurs. Here, a screw cannon off either ball should not be a difficult stroke even for a moderate player. Unless, however, the object ball is taken very full the cannon can very easily be missed. It is easy enough to screw at a right angle by means of a half-ball stroke when the cue ball is comparatively near the object ball, but screwing at a right angle by means of a half-ball stroke is a very different thing when the cue ball is a long way from the object ball. Such a stroke, whilst not impossible, is a very difficult one owing to the great amount of reverse rotation which has to be imparted to the cue ball, and is quite beyond the ordinary player. If, instead, the object ball be taken about three-quarter-ball the cannon should present no difficulty even to a moderate player. All that is necessary is plenty of pace combined with a low hitting of the cue ball. Half-way between the centre and the bottom of the ball is low enough, and no side should be used. With the balls in the position shown on the diagram the easiest way of getting a cannon is by playing from the left end of the D and screwing from the red on to the white. Such a stroke, however, is not nearly such a good positional one as the cannon illustrated on the diagram. By screwing from the white on to the red, the red may be kept at the top of the table, provided that the cue ball gets well on to it. When the stroke is well played the red remains higher up the table than the spot and thus good position for a pot, or for an in-off will generally be left for the next stroke. On Diagram 645 the intersected line drawn from the red ball illustrates how good position may be left for a pot as the result of the

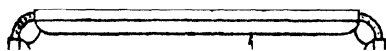


DIAGRAM 645.—A screw cannon from the D. Red ball on the spot. Object white 11 $\frac{3}{4}$ inches from the top cushion and 27 $\frac{1}{2}$ inches from the side cushion. A well-played stroke sends the red to the vicinity of the corner pocket and brings the object white to the top of the table again.

cue ball taking the red a shade less than full and in such a way as to send it slightly up the table.

Diagram 646 illustrates an awkward position. With the balls to the measurements given under the diagram the screw cannon off the white is a difficult stroke and one that is quite beyond the ordinary player. The only other shot at all on in the ordinary way of speaking is a cannon off the red, but this is also by no means an easy stroke. For any player who can screw with plenty of power the screw cannon is a fine positional stroke. In successful strokes the cue ball travels without much pace after its contact with the object white, and provided it gets well on to the red, position for a pot or for an in-off into the corner pocket is generally left for the next stroke. This screw

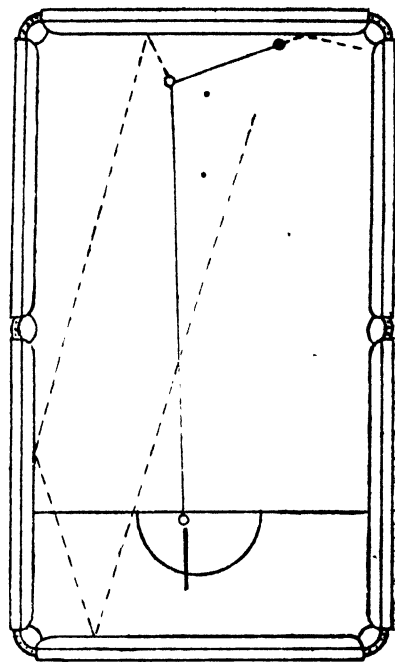


DIAGRAM 646.—A screw cannon from the D. Red ball $1\frac{1}{2}$ inches from the top cushion and 22 inches from the side cushion. Object white 11 inches from the top cushion and $25\frac{1}{2}$ inches from the side cushion. A well-played stroke places the red near the pocket.

cannon must be played at high pace and the contact with the object ball should be not less than three-quarter-ball—preferably a shade fuller than three-quarter-ball. For big screws of this nature the butt of the cue should be somewhat raised, as the downward hitting of the cue ball which results from this uplifting of the cue increases the retrograde rotation which low hitting imparts to the cue ball.

Diagram 647 shows a position which with slight variations sometimes occurs. Playing from the D, either object ball presents a half-ball top-pocket in-off, but the safer stroke to play is a screw cannon, and as very good position can

a good enough one to play. The screw must, of course, be off the object white



DIAGRAM 647.—A screw cannon from the D. Object balls exactly on a line drawn from one centre pocket to the other. Object white on a spot 1 inch from the centre spot. Red ball $4\frac{1}{2}$ inches from the object white.

on to the red as shown on the diagram. When the cue ball gets quite full on to the red, position will be left for a pot. When, however, the red happens to be taken a little less than full, position may be left for an in-off. On the diagram the intersected line drawn from the red ball indicates how position may be left for a pot as the result of a screw which has been just a little too much to leave the red for a straight pot. This screw cannon should be played without much strength, and aim should be taken for a fuller than half-ball stroke, for by taking the object ball fuller than half-ball less pace is necessary than is the case with a half-ball or slightly less than half-ball stroke. This screw cannon to leave the red in good position for a centre-pocket pot or in-off is not nearly so easy a stroke as it may appear, and often through getting badly on to the red the after-position will be very bad indeed. Moreover, unless the strength of the stroke be well judged the object white may go into baulk and remain there. For players who are very certain of long top-pocket in-offs from the D an in-off from the white—followed if necessary by an in-off from the red—is a better stroke than the screw cannon.

Diagram 648 illustrates a very awkward position that with slight variations now and then occurs. A cannon is, of course, possible by various kinds of strokes, but any cannon off the side and top cushions, or off the top cushion only, is a difficult stroke owing to the nicety of judgment which any such stroke demands. An alternative stroke to a cushion cannon is a ball-to-ball cannon by means of screw. Such a stroke, however, demands great screwing powers, and is thus quite beyond the ordinary player. For a big screw like this the butt of the cue should be elevated a little, for as already stated the downward hitting of the cue ball which results from this upraising of the end of the cue increases the retrograde rotation which always results from a low hitting of the cue ball. High pace is, of course, essential for this screw cannon, and the first object ball must be taken considerably fuller than half-ball, otherwise the stroke will fail. The after-position which results from this screw cannon is naturally very uncertain, but when the cannon is from the white on to the red—as shown on the diagram—it will often be very good provided that the cue ball catches the red in such a way as to keep it at the top end of the table.

Diagram 649 illustrates a position which, as regards the kind of stroke that must be played when a player is in hand, is of common occurrence. The cannon is a screw or a strong forcing stroke, and as a stroke presents no difficulty whatever to any fair player. A forcing stroke, of course, scatters the balls and

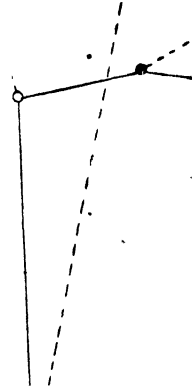


DIAGRAM 648.—A screw cannon from the D. A difficult stroke. Red ball $23\frac{1}{2}$ inches from the side cushion and 41 inches from the top cushion. Object white $21\frac{1}{2}$ inches from the side cushion and $48\frac{1}{2}$ inches from the top cushion.

the kind of after-position resulting from such a stroke is relegated to chance. A well-played screw, on the other hand, will drive the red to the vicinity of the corner pocket and thus in all probability the after-position will be good. This screw cannot leave the red well situated for the next stroke is not by any means an easy shot. If played with plenty of strength, the screw from one ball to another presents no difficulty whatever, but a strong screw is nearly as poor a stroke—as regards playing for position—as a strong forcing stroke. If, on the other hand, an attempt is made to play the stroke by means of a slow screw the cannon will be missed altogether, as it is impossible to screw

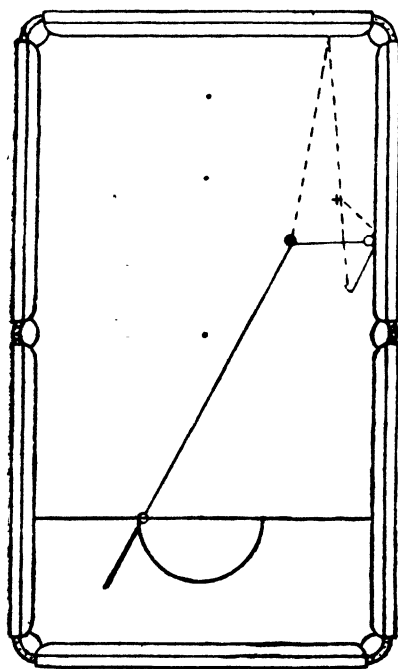


DIAGRAM 650.—A screw cannon from the D. Red ball 50 inches from the top cushion and 14½ inches from the side cushion. Object white touching the cushion and the same distance down the table as the red ball. When the stroke is played from the far end of the D a kiss generally takes place after the cannon has been made. Diagram 651 shows the correct spotting for this cannon.

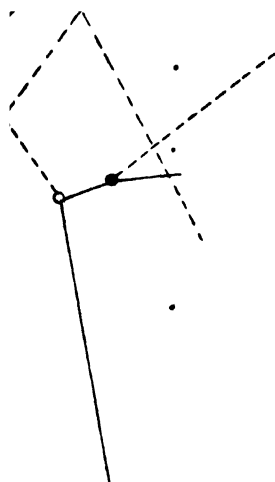


DIAGRAM 649.—A screw cannon from the D. Object white 11½ inches from the side cushion and 48 inches from the top cushion. Red ball 20½ inches from the side cushion and 42 inches from the top cushion.

to any extent by means of a slow stroke when both the object balls are a long way from the cue ball. Many a really good player to whom a three-figure break is no great rarity has occasionally experienced the mortification of missing a cannon of the nature of the one illustrated on Diagram 649 through playing it with insufficient strength in an attempt to cannon on to the second object ball without much speed. The best way of playing this screw cannon is by means of a fullish stroke—nearly three-quarter ball—combined with a fair amount of speed. The fullish contact with the first object ball will cause the cue ball to cannon on to the red without much pace, and thus control of the red ball is possible. Of course, little or no control can be exercised over the object white, but many and many a cannon position occurs in which really good

players have to be satisfied with controlling the running of one ball only, and when one ball can be placed in a good scoring position it is often easy enough after a stroke or two to bring the other ball into play again.

Diagram 650 shows a position which as regards the stroke to be played is typical of positions that occasionally occur. The cannon off the red although a screw is not a very difficult stroke even for quite an ordinary player. Less screw is required when the stroke is played from the far end of the D line than when it is played from some point a considerable distance away from this end of the line, consequently most players spot the cue ball as shown on Diagram 650. When, however, the stroke is played from the far end of the D line, or from anywhere near this point, a kiss between the cue ball and the ball first hit by the cue ball, or between the two object balls, is almost certain to take place after the cannon has been made, and as at the moment the kiss takes place the ball first struck by the cue ball is travelling with high speed, the two balls may go almost anywhere, and consequently the after-position may be good, bad, or indifferent, and when it happens to be good the player may consider himself very fortunate. Playing this screw from the far end of the D causes the first object ball to travel pretty straight up and down the table, and thus as it returns from the top cushion it generally comes into contact with either the cue ball or the other object ball. On Diagram 650

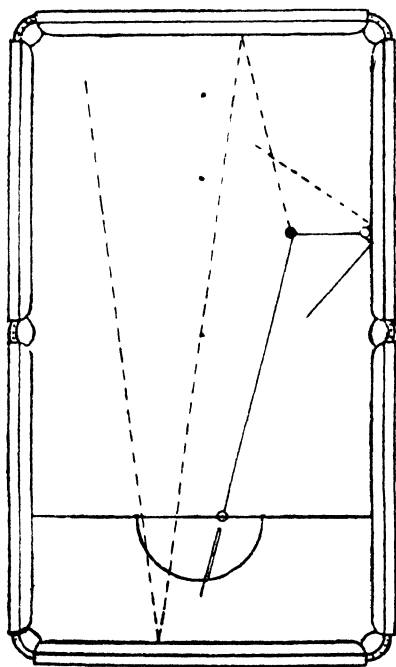


DIAGRAM 651.—A screw cannon from the D. Position of object balls exactly as on Diagram 650. Spotting very squarely makes it possible to throw the red to the other side of the table, and in this way the kiss illustrated on Diagram 650 is prevented.

the space between the crosses roughly indicates the neighbourhood of the likely kiss. The stroke might, however, be played a dozen times and a kiss take place each time at a different spot, and sometimes between the cue ball and the first object ball and sometimes between the two object balls. The kind of kiss will vary too. Occasionally it will be a very full one, at other times half ball or less, and thus it can easily be understood how totally impossible it must be to tell what the after-position will be like in the event of a kiss taking place. Again, even if no kiss takes place when the ball first hit by the object ball returns from the top cushion the danger of a kiss is still not over, for it may occur as the ball is travelling up the table again after its rebound from the baulk cushion, especially is this the case when the table is very fast.

In playing a cannon from the D with the object balls in a position at all similar—as regards the kind of stroke to be played—to the one illustrated on Diagram 650 the thoughtful player takes care to avoid all possibility of a kiss taking place by spotting the cue ball a long way from the far end of the D, and by this means throwing the first object ball well away from the side cushion.

Diagram 651 illustrates this stroke. The position of the object balls is exactly the same as on Diagram 650, but the cue ball is spotted a few inches to the right of the centre of the D line instead of at the far end of the line. More screw is, of course, required for the cannon when the cue ball is spotted as shown on Diagram 651 than when it is spotted at the far end of the D line, but even with the extra screw required the stroke is not too difficult for any fair player. The intersected line drawn from the red ball on Diagram 651 indicates the manner in which this ball is thrown away from the side cushion and in consequence of which how any chance of its kissing either of the white balls after its rebound from the top cushion is prevented. Of course, in a stroke of this nature it is impossible to give the red ball any very exact direction of travel, nevertheless it can always be thrown well away from the cushion, and this is the essence of the stroke. When the stroke is well played—that is to say when the direction given to the red ball and the pace at which it is made to travel are both good—the after-position will very probably be favourable, for the red ball after travelling down and up the table will come to rest in the vicinity of the top pocket.

CHAPTER XXX.

LONG-DISTANCE CANNONS—OBJECT BALLS CLOSE TOGETHER.

When the object balls are close together a cannon may be the easiest of strokes even with the cue ball quite a long distance away. But no matter how simple the stroke may be, a long-distance cannon with the object balls very near each other always requires very good handling in order to ensure good position for next stroke.

Diagram 652 shows a position that with slight variations now and then occurs. Playing from the D the cannon cannot well be missed, but if played with just a little too much strength the after-position will in all probability be very bad indeed. By means of a good-strength stroke the red can be placed in good position for a pot. If aim be taken as though to send the cue ball right between the object balls the red will travel towards the pocket more or less in the manner indicated by the intersected line shown on the diagram. Sometimes, when playing to leave the red in position for a pot, an in-off will be left instead, or position may be left for an in-off from the white. Notwithstanding, however, that various good positions can be left, as the result of a cannon from the placing of the balls on Diagram 652, it is not nearly so easy to get one of these good positions as it may seem to be.

Owing to the long distance which the cue ball has to travel before reaching the object balls, the stroke should be played with drag. The use of drag allows a long-distance slow stroke to be played with considerably more strength than may be used when the cue ball is struck at the centre. Not only this, the use of drag whilst it lasts ensures true running of the cue ball and in no stroke is a ball more liable to run off a little than in a slow long-distance stroke.

Diagram 653 shows a position for the simplest of cannons from the D. Although the stroke can perhaps hardly be called a long-distance one, the cue ball is a long way from the object balls when the gentle kind of stroke that has to be played is taken into consideration. A well-played stroke will leave the red in position for a centre-pocket in-off or for a pot. On the other hand, the after-position can easily be very bad indeed when the stroke is played at a pace which



DIAGRAM 652.—A long-distance cannon from the D. Red ball on the spot. Object white $1\frac{3}{4}$ inches from the red and the same distance from the top cushion as the red ball. A good-strength stroke will place the red near the pocket.

is only just a very little too fast. Care should also be taken that the cue ball does not pass between the object balls as the result of the cannon, for when this happens the after-position may easily be very bad.

Diagram 654 shows position for another absolutely simple cannon from the D. Owing, however, to the stroke being a long-distance one it is not advisable to try and cannon by a stroke so gentle as to hardly move the object balls. The risks attending such a stroke are too great. The cue ball may run off a little, and when this happens, even though the cannon be made, the after-position will not come out as intended. In many long-distance



DIAGRAM 653.—A cannon from the D. Object white on the centre spot. Red ball 2 inches from the white and on the line between the centre pockets. Care must be taken that the cue ball does not pass right between the balls, otherwise the position resulting from the cannon may easily be very bad.

DIAGRAM 654 —A cannon from the D. Object white 9 inches from the side cushion. Red ball $1\frac{1}{2}$ inches from the white. Both balls in a line with the pyramid spot.

strokes, too, with the object balls lying very close together an attempt to leave all three balls together as the result of a slow stroke often results in a cover. With the balls as shown on the diagram, the red can be dribbled up to the pocket and in this way position can be left for a pot, or else for an in-off. An alternative stroke to play is to bring the red ball down the table again without at the same time moving the object white very far. This is the stroke shown on the diagram, and it is a very good example of the gathering cannon, which will be discussed more fully in a later chapter.

CHAPTER XXXI.

CANNONS—HITTING A CUSHION FIRST.

Just as it is often necessary to hit a cushion before the object ball when playing an in-off, so must the same method of play be frequently adopted when playing a cannon. The variety of cannons which should be played by taking a cushion before touching an object ball is fairly considerable and embraces not only those positions wherein a cannon by any other stroke is either practically impossible in the ordinary way of speaking, or when possible is a very difficult stroke, but also those positions wherein a ball-to-ball stroke, although presenting no difficulty just as a stroke, leads to bad or uncertain position. Many of these cannons made by hitting a cushion before a ball are simple enough strokes, although appearing very difficult to the player who only occasionally makes a twenty break, and few of the strokes described in this chapter need be beyond the compass of very moderate players provided that their underlying principles are studied and some little practice of them is made on a table.

Diagram 655 shows a position of very common occurrence as regards the kind of stroke to be played. Here, a cannon played by hitting the cushion before the object ball is an easy enough stroke. A little judgment is, of course, necessary as regards the point on the cushion at which aim should be taken, but there is some little latitude even here. With the balls situated as shown on the diagram the cue ball should be struck with the side which will be running side off the cushion—right-hand side on the diagram. As a rule, these cannons should be played without much strength. In the position shown on Diagram 655 the red ball can be placed quite close to the corner pocket when the strength of the stroke is well judged. With the object balls to the measurements given under the diagram the cannon could also be played from the D.

Diagram 656 illustrates a cannon which is a variation of the one shown on Diagram 655. Although the first object ball is here only about four inches farther from the cushion than on Diagram 655 this extra distance makes the

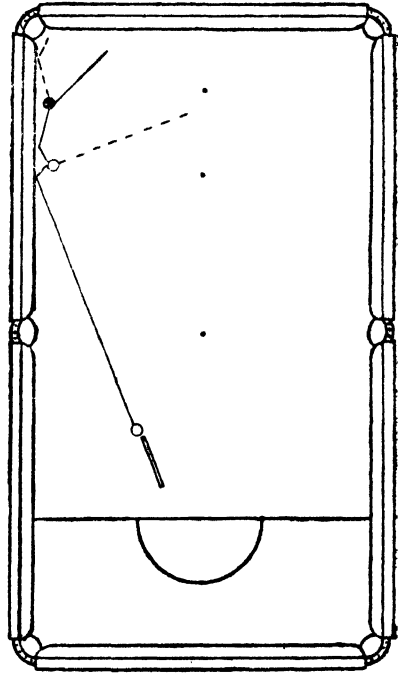


DIAGRAM 655.—A cannon played by hitting the cushion before the first object ball. Object white $32\frac{1}{2}$ inches from the top cushion and $2\frac{1}{2}$ inches from the side cushion. Red ball 14 inches from the top cushion and $1\frac{3}{4}$ inches from the side cushion. Cue ball 51 inches from the baulk cushion and 21 inches from the side cushion.

cannon a far more difficult stroke than the one just discussed. When the first object ball is pretty close to the cushion the cue ball has to take the cushion just a little in front of the ball, and consequently the player sees without difficulty the point on the cushion at which he must aim. When, however, the first object ball is well away from the cushion, the cue ball must strike the cushion well in front of the object ball—especially is this the case when the stroke is played with running side—and herein lies the difficulty of the stroke. In all cases where the cushion has to be taken well in advance of the object ball the latitude that exists for hitting the cushion on different points without the stroke—whether a cannon or an in-off—being missed is small indeed. Let the

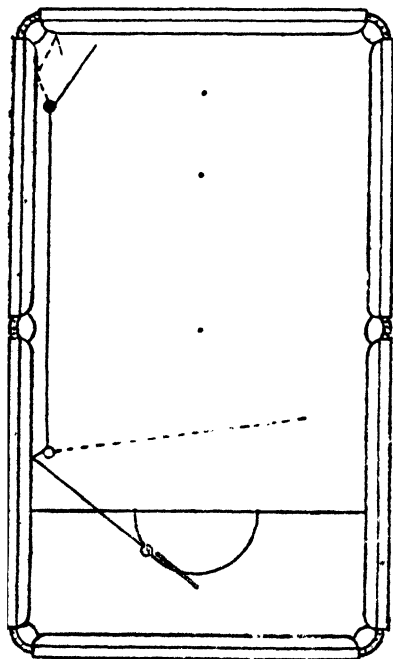


DIAGRAM 657.—A cannon—hitting the cushion before the object ball. Object white $42\frac{1}{2}$ inches from the baulk cushion and $2\frac{1}{2}$ inches from the cushion. Red ball 14 inches from the top cushion and 2 inches from the side cushion. Cue ball on the D semicircle.

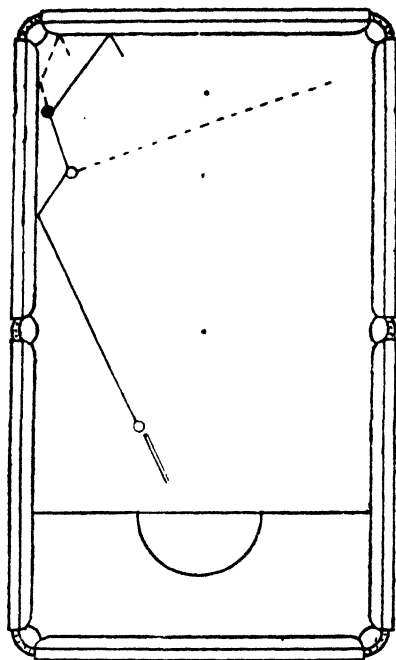


DIAGRAM 656.—A cannon—hitting the cushion before the object ball. Object white $33\frac{1}{2}$ inches from the top cushion and $6\frac{1}{2}$ inches from the side cushion. Red ball 14 inches from the top cushion and half an inch from the side cushion. Cue ball 51 inches from the baulk cushion and 21 inches from the side cushion.

cushion only be taken a shade too far from the object ball and the contact with the object ball will be too full, and on the other hand, if the cushion be taken too near the object ball the ball will either be missed altogether or else it will be taken too thinly to allow of the stroke being made. In the position shown on Diagram 656 the first object ball is not situated at the extreme limit from the cushion for this class of stroke, consequently there is a small amount of latitude as to the point on the cushion which must be struck for the cannon to be made. Nevertheless, even here, very good judgment as to the point on the cushion at which aim must be made is essential for the success of the stroke. In all positions at all similar to those shown on Diagrams

655 and 656 the distance of the second object ball from the first, as also its distance from the cushion have an important bearing on the stroke. When the first object ball is as near the cushion as shown on Diagram 655, the cue ball after its contact with the cushion and the ball, travels quite close to the cushion, whereas when the first object ball is well away from the cushion, as shown on Diagram 656, the cue ball cannot, of course, travel along the cushion, but as the result of a contact which is either half-ball or approximately half-ball it will travel towards the cushion as shown on the diagram.

Diagram 657 illustrates a cannon which is of exactly the same nature as the stroke shown on Diagram 655, although the principle of the stroke is here carried to extremes. Nevertheless, although this cannon on Diagram 657 is perhaps somewhat in the nature of a fancy stroke and is not often played, it is not nearly so difficult nor so uncertain a stroke as most players would imagine. It should be played with plenty of running side and the cushion must be struck pretty close to the object ball. The strength of the stroke should be very little more than is necessary to cause the cue ball to travel up the table to the second object ball.

When the cannon is off the white on to the red—as shown on the diagram—a very good leave will generally result from a successful stroke. As already stated this cannon from behind the first object ball is not often played, the more general stroke with the balls as shown on Diagram 657 being a screw cannon—played with left side to give a chance of its being made off the top cushion when too much screw has been used for a direct stroke. The strength at which the screw cannon must be played combined with the impossibility of determining how full or otherwise the second object ball will be taken obscures the after-position which will result from a successful stroke.

Diagram 658 shows a position which on some cushion or other, but more particularly on the top cushion, now and then occurs. Although the first object ball is only an inch and a half from the cushion and but three-eighths of an inch from the second object ball, playing from the position of the cue ball a cannon is not a very difficult stroke. The thing to avoid is a kiss between the object balls. By playing the stroke with plenty of running side and taking the cushion as close to the first object ball as possible without actually hitting the ball before the cushion, a kiss between the object balls can be prevented, and if the kiss is prevented the cannon will be made. Unless, however, the cushion is taken very

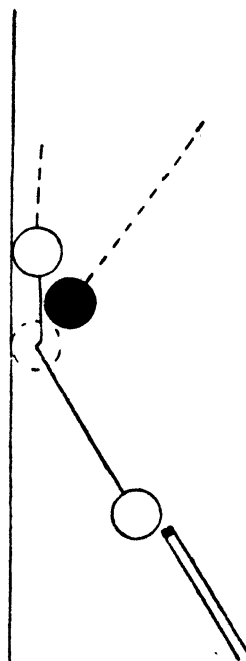


DIAGRAM 658.—A cannon—hitting the cushion before the object ball. Object white touching the cushion. Red ball $1\frac{1}{2}$ inches from the cushion and three-eighths of an inch from the white. Cue ball 5 inches from the cushion and 9 inches from the red. The intersected circle shows where the cue ball must strike the cushion in order to prevent a kiss taking place between the object balls.

close to the first object ball, the object balls are bound to kiss. When the cannon is made quite gently good position will result from it.

Diagram 659 illustrates a position which, with variations which do not affect the nature of the stroke to be played, occasionally occurs. With the balls to the exact measurements given under the diagram four entirely different strokes are on as regards cannons only, viz.: an exceedingly thin ball-to-ball cannon—a difficult stroke this—a cannon off the white, *via* the opposite side cushion, a cannon off the red, also *via* the opposite side cushion, and the cannon shown on the diagram made by hitting the cushion in front of the object white. This last cannon requires well handling, as owing to the first object

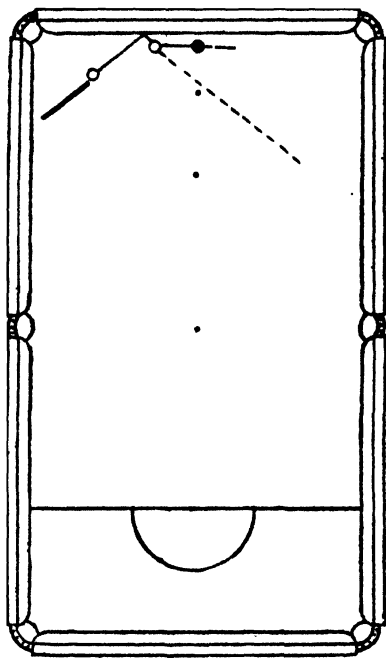


DIAGRAM 659.—A cannon—hitting the cushion before the object ball. Red ball $1\frac{1}{2}$ inches from the cushion and right behind the spot. Object white $1\frac{1}{2}$ inches from the cushion and $6\frac{1}{2}$ inches from the red. Cue ball $6\frac{1}{2}$ inches from the top cushion and $11\frac{1}{2}$ inches from the side cushion.

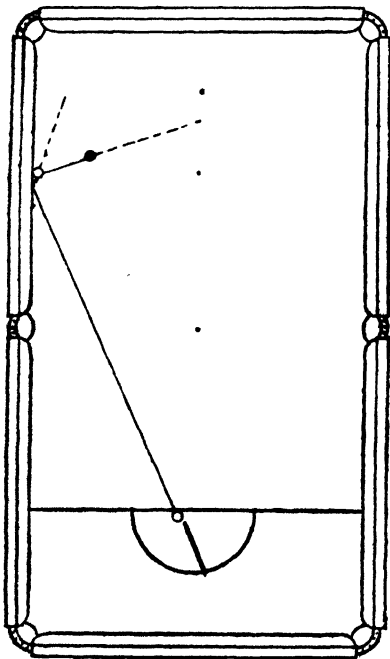


DIAGRAM 660.—A cannon—hitting the cushion before the object ball. Object white touching the cushion and exactly opposite the pyramid spot. Red ball $7\frac{1}{2}$ inches from the side cushion and 31 inches from the top cushion. Cue ball in hand.

ball being only one and a half inches from the cushion the cue ball cannot get behind it as easily as when the distance which separates it from the cushion is at least equal to a ball's diameter. With the balls to the measurements given under the diagram it is quite possible to get full on to the red by means of this cushion stroke and thus a scoring position may be left to continue with. A cannon off the white *via* the opposite side cushion is also a good positional stroke, for when the cue ball gets well on to the red this ball may be driven to the vicinity of the corner pocket.

In the strokes already described in this chapter both object balls are near the same cushion and the cue ball gets behind the first object ball

after striking the cushion. Another class of cannons made by hitting the cushion in front of the first object ball embraces those strokes in which the cue ball instead of taking the object ball on the side which is near the cushion takes it on the side away from the cushion, and thus instead of getting behind it travels away from it and towards another cushion. These particular cannons are seldom or never played by ordinary players, although in many instances they are not at all difficult and quite within their compass, and in other instances although requiring very good judgment as to where the cushion must be struck are less difficult than a cannon by any other kind of stroke.

Diagram 660 illustrates one of these cannons made by hitting the cushion in front of the first object ball. With the balls to the exact measurements given under the diagram a cannon can be made by means of a screw from the red on to the white, but such a stroke must be played with plenty of pace and consequently the resting places of the three balls cannot be at all accurately gauged, and although it is quite possible to obtain good after-position from the screw cannon, unless such a stroke is very well handled very bad position is likely to result from it. A cannon is also on by hitting the object white before the cushion, but this short cross-cannon sends the object white up to the corner pocket and often enough causes it to fall into the pocket or to remain on its brink. The cushion-cannon illustrated on the diagram should be played with running side and without much strength, and the cushion should be struck pretty close to the object ball. As the stroke is a long-distance one drag should be used to ensure the true running of the ball. The stroke should present no difficulty to a very ordinary player. Good position can be obtained by means of this cushion stroke.

Diagram 661 illustrates another cannon played by hitting the cushion just in front of the object ball. With the balls to the measurements given under the diagram a cannon off the red by a direct stroke is quite an easy stroke, but the direct stroke requires considerably more strength than the cushion-stroke and consequently the after-position which results from it is not so clearly defined as that which results from the slower cushion-stroke. The cushion-stroke should be played with plenty of drag and the cushion should be taken pretty close to the object ball. The intersected line drawn from the red ball indicates the good after-position which results from a stroke played without much strength.

Diagram 662 illustrates a position which is typical of positions which often occur at the top of the table. With the balls to the measurements given under

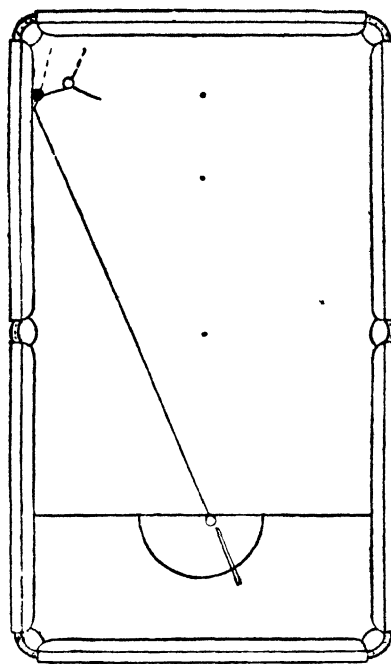


DIAGRAM 661.—A cannon—hitting the cushion before the object ball. Red ball touching the cushion and exactly in a line with the spot. Object white $5\frac{1}{2}$ inches from the side cushion and $9\frac{1}{4}$ inches from the top cushion. Cue ball in hand.

the diagram a cannon can be quite easily made, either off the white and the top cushion, or—as shown on the diagram—by taking the cushion in front of the object ball before hitting the ball. Were the object ball near the cushion the red instead of the white, a cannon made by hitting the ball before the cushion would be the correct stroke to play, for by such a stroke the red could be driven to the vicinity of the pocket, and in this way good position would be ensured for the next stroke. With the white near the cushion, as shown on the diagram, the case is different, and though good after-position can be obtained by means of a cannon

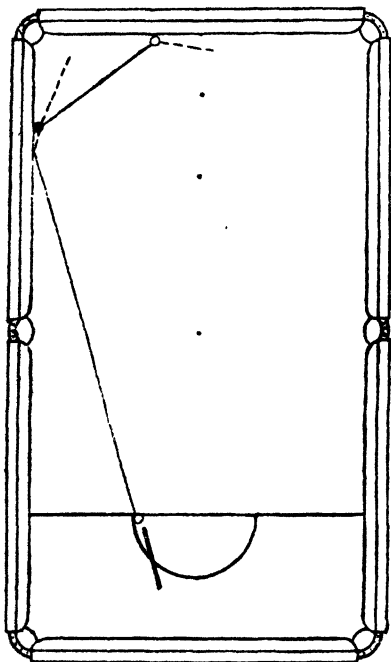
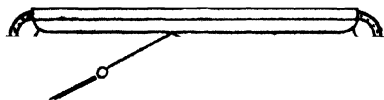


DIAGRAM 663.—A cannon—hitting the cushion in front of the object ball. Very good position may be obtained from a stroke played without much pace. Red ball touching the side cushion and about 18 inches from the top cushion. Object white touching or nearly touching the top cushion and about 21 or 22 inches from the side cushion. Cue ball spotted at or close to the near end of the D line.

DIAGRAM 662.—A cannon—hitting the cushion before the object ball. Object white $\frac{1}{2}$ inch from the cushion and right behind the spot. Red ball $5\frac{1}{2}$ inches from the top cushion and $32\frac{1}{2}$ inches from the side cushion. Cue ball 7 inches from the top cushion and 18 inches from the side cushion.

made by hitting the object ball before the cushion, unless such a cannon is very well played the after-position can easily be very bad. It is no use driving the object white to the vicinity of the pocket unless position for an in-off can be left for the next stroke. If instead of playing direct on to the white the cue ball is made to take the cushion before the object ball, as illustrated on the diagram, position for quite an easy cannon can be left for the next stroke. This cannon, made by hitting the cushion before the ball, should be played with very gentle strength in order to move the object balls as little as possible. The cushion must be taken pretty close to the object white.

In the examples already given the object balls are not very far apart, but these cannons—made by hitting the cushion in front of an object ball which is either touching the cushion or quite close to it—are often quite easily on when the object balls are a considerable distance from one another, especially is this the case when the second object ball also lies near a cushion.

Diagram 663 illustrates a position which is typical of positions which occur every now and then. With the balls to the measurements given under the diagram a cannon played by hitting the cushion in front of the object ball is a fairly easy stroke and one with which quite moderate players will find no difficulty. For this cannon the cue ball should be spotted at or near the end of the D line—as shown on the diagram—and the cushion must be hit pretty close to the object ball. Running side should be used and as very good position will result from a slow stroke, drag should be employed in conjunction with the side. The intersected line drawn from the red ball indicates the good position that results from a slow stroke. On the diagram the second object ball is shown quite close to the cushion, but with this ball a couple of inches or so from the cushion the cannon would be still easier. Of course, the direction in which

the cue ball travels after having hit the first object ball depends upon how full or otherwise it takes this ball. Should it take the object ball very thinly it will strike the top cushion a considerable distance in front of the second object ball, but whenever it gets well hold of the first object ball, as a result of striking the cushion pretty close to the ball, it will always travel very close to the path indicated by the intersected line on the diagram.

Diagram 664 shows the red ball in exactly the same position as on Diagram 663, but the object white is considerably nearer the middle of the top cushion than on Diagram 663. With the object balls to the measurements given under the diagram a cannon can be made quite easily by hitting the cushion just in front of the red ball provided that the stroke be played from the right end of the D line, as shown on the diagram. Very good position will result when not much pace is used, consequently the stroke should be played with drag. When by reason of the cushion having been struck a considerable distance from the first object ball the contact with this ball is a thin one, the cue ball will strike the top cushion too far from the second object ball to allow of the cannon being made. In strokes of this nature the cue ball should always be struck with running side to

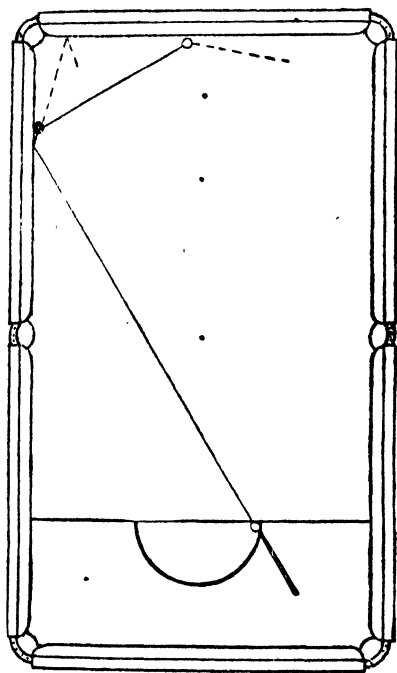


DIAGRAM 664.—A cannon—hitting the cushion in front of the object ball. Very good position will generally result from a slow stroke. Red ball touching the cushion and about 18 inches from the top cushion. Object white touching or nearly touching the top cushion and 31 inches from the side cushion. Cue ball spotted at or close to the far end of the D line.

give a chance of the cannon being made off the top cushion when the cue ball strikes this cushion some little distance from the second object ball.

Diagram 665 illustrates a cannon which is really exactly the same stroke as the one illustrated on Diagram 663. The second object ball, it is true, is here close to the side cushion, whereas on Diagram 663 it is on the top cushion. The line of travel, however, which takes the cue ball on to the second object ball in the position shown on Diagram 663 will, if continued off the top cushion, as indicated by the continuous line on Diagram 665, take it on to the second object ball lying close to the side cushion. This cannon should be played with running side and plenty of drag.

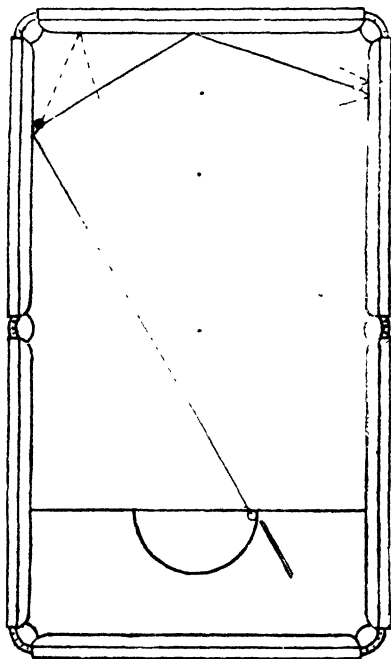


DIAGRAM 666.—A cannon—hitting the cushion in front of the object ball. Red ball touching the side cushion and about 18 inches from the top cushion. Object white 1 inch from the side cushion and 13 inches from the top cushion. Cue ball at or near right end of the D line.

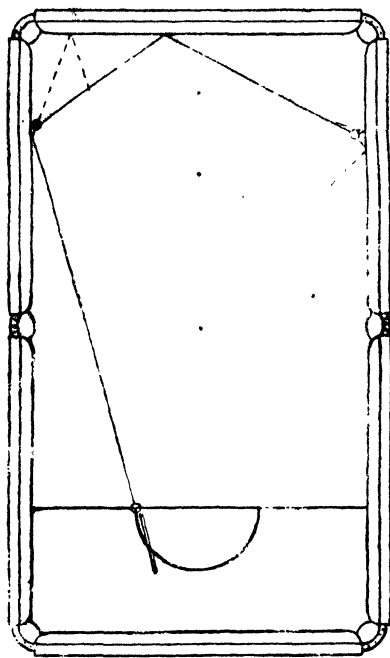


DIAGRAM 665.—A cannon—hitting the cushion in front of the object ball. Red ball touching the side cushion and about 18 inches from the top cushion. Object white 1 inch from the side cushion and 19 inches from the top cushion. Cue ball at or near the left end of the D line.

A stroke which causes the cue ball to cannon on to the object white without much strength will generally leave the red in position for a pot—as indicated by the intersected line drawn from this ball.

Diagram 666 illustrates a cannon which is of exactly the same nature as the cannon illustrated on Diagram 664. The two strokes are played in exactly the same way and from the same spotting of the cue ball. The line of travel which in Diagram 664 takes the cue ball to the second object ball lying on the top cushion takes it in Diagram 666 to the second object ball lying close to the side cushion. Here also, a successful stroke played without much strength will generally leave the red in position for a pot or for an in-off.

Diagram 667 shows the red in exactly the same position as in Diagrams 665 and 666, but the object white is considerably higher up the side cushion than in either of these two diagrams. With the object balls to the measurements given under the diagram a cannon is no longer possible by the stroke which ensures the cannon being made in the positions illustrated on Diagrams 665 and 666. Side by itself—no matter how much is used nor how good a contact is made with the first object ball—is not sufficient for the making of the cannon, for when struck with side only the cue ball must always strike the top cushion—irrespective of from what position in the D the stroke has been played and of what pace has been used—too far from the second object ball to allow of the side carrying it on to it. A cannon—the cue ball hitting the cushion in front of the first object ball—is, however, quite on by means of screw, for, as already demonstrated in the chapter on SCREW AND REVERSE ROTATION, if the cue ball is under the influence of retrograde rotation at the moment of its contact with the object ball, the effect of this reverse rotation or screw is shown—in all contacts except very thin ones—in the angle at which the cue ball is thrown from the object ball, quite irrespective of whether or not the cue ball has struck a cushion prior to its contact with the object ball. This cannon by means of screw—and preferably of screw and side—off the cushion, which is illustrated on Diagram 667, whilst not a difficult stroke for any fair player is always a somewhat uncertain one even for a good player. The amount of screw and pace has to be very nicely judged, for in all long-distance strokes screw and pace are very intimately related to one another. Unless a long-distance stroke is played with plenty of pace it is impossible to screw at all, for although a low hitting of the cue ball always imparts reverse rotation to it, this reverse rotation soon becomes exhausted—by reason of the friction between the cue ball and the cloth—unless the ball is travelling with plenty of speed, and consequently what would be screw in a fast long-distance stroke is only drag when the same stroke is played without much pace. As screw is essential for the cannon illustrated on Diagram 667, the stroke must be played with plenty of pace. Also, the cushion must be hit pretty close to the object ball in order to ensure the cue ball getting well hold of it, for in all long-distance strokes when the contact with the object ball is appreciably less than half-ball practically no screw takes place. In Diagram 667 the cannon is shown off the top cushion, but when

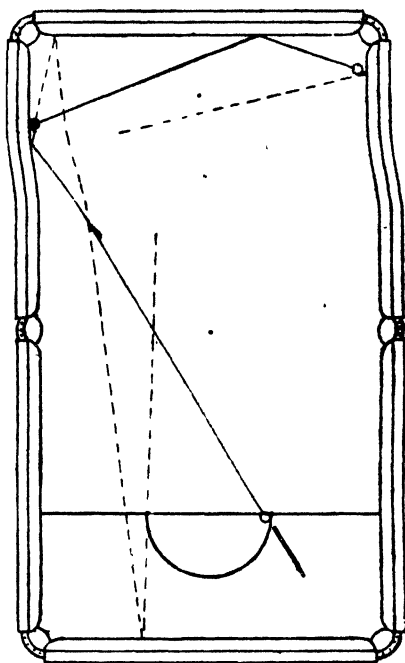


DIAGRAM 667.—A cannon—hitting the cushion in front of the object ball. Red ball touching the side cushion and about 18 inches from the top cushion. Object white $1\frac{1}{2}$ inches from the side cushion and 5 or 6 inches from the top cushion. Some screw is required for this stroke.

the stroke is played with plenty of screw and pace the cue ball will often cannon on to the second object ball without having touched the top cushion at all, and with extreme screw and pace the cue ball—after a fullish contact with the first object ball—will travel across the table to a point on the side cushion half a yard or more from the top cushion.

In Diagrams 663 to 667 the first object ball is situated about 18 inches from the top cushion, but of course the same kind of stroke that is illustrated on these diagrams can be played with the first object ball higher up or lower down the table. By placing the first object ball in the same position in each case, however, a comparison is afforded of the different results which are obtained by playing from opposite ends of the D, and also by playing with side only or with side and screw. In all positions at all similar to those illustrated on Diagrams 663 to 667 the following points should be remembered: In all strokes in which the contact with the object ball is the same, the higher up the table the first object ball is, the less distance across the table will the cue ball travel before it reaches the top cushion; and *vice versa*, the lower down the table the first object ball is the farther will the cue ball travel across the table before it reaches the top cushion; again, the nearer to the near end of the D—measured from the first object ball—the cue ball is spotted the sooner will the top cushion be

struck, and the nearer to the far end of the D that the stroke is played from, the farther from the first object ball will the top cushion be struck.

Variations of contact with the first object ball in all strokes of the nature of those illustrated on Diagrams 663 to 667 naturally give different results, and when the contact with the object ball is a very thin one the top cushion will be struck at a point very much nearer the side cushion first taken by the cue ball than is the case when the contact with the object ball is approximately a half-ball one. Again, the nearer to the side cushion first taken by the object ball that the top cushion is struck, the lower down the table will the opposite side cushion be taken, consequently when—with one object ball on a side cushion well above the centre pocket—it is desired to cause the cue ball to take the opposite side cushion at some point not far above the centre pocket, the cue ball should be spotted at the near end of the D—measured from the first object ball—and care should be taken to ensure that the contact with the object ball is a thin one, which of course means that the cue ball must strike the cushion a considerable distance in front of the object ball.

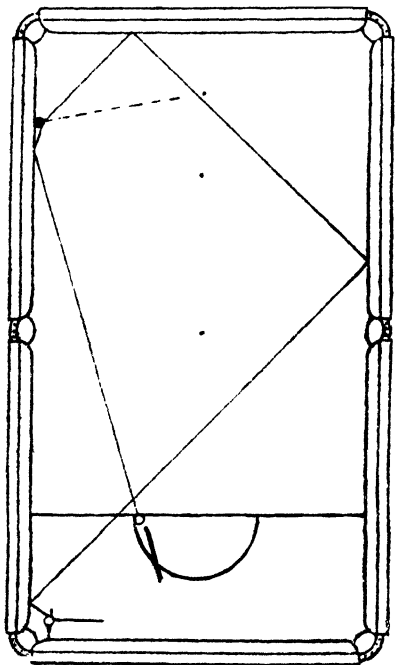


DIAGRAM 668. An all-round cannon—hitting the cushion in front of the object ball. A difficult stroke. Red ball touching the side cushion and about 18 inches from the top cushion. Object white 3 or 4 inches from the baulk cushion and the same distance from the side cushion. Cue ball at the left end of the D line.

Diagrams 668 and 669 illustrate a difficult cannon often made by good players. Played off the cushion in front of the object ball this cannon is only possible when the contact with the object ball is a very thin one. A reference to the diagrams shows that the far side cushion must be taken at some point not very distant from the centre pocket. As the cannon may be made direct on to the second object ball, or *via* the baulk-side cushion—as on Diagram 668—or the baulk-cushion—as on Diagram 669—there is always a good chance of the stroke coming off whenever the cue ball strikes the far side cushion anywhere from a few inches to about a foot above the centre pocket. Unless, however, the contact with the first object ball is a very thin one the cue ball will always take the opposite side cushion too far above the centre pocket to allow of the cannon being made, for when this cushion is struck a long distance above the centre pocket the cue ball will cross the table and strike the lower side cushion outside baulk. The stroke is a difficult one solely on account of the object ball having to be taken quite thinly. Long-distance strokes which can only be made by means of a thin contact with the first object ball are none too easy when the contact is by a direct stroke. A stroke which can only be made by a very thin contact is rendered vastly more difficult when the cushion has to be struck

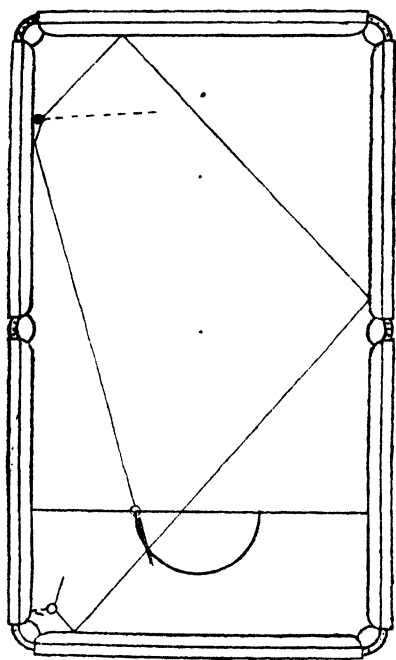


DIAGRAM 669.—An all-round cannon—hitting the cushion in front of the object ball. The stroke is the same as the one illustrated on Diagram 668 except that owing to the contact with the red being still thinner than on Diagram 668 the cue ball hits the side cushion nearer to the centre pocket and cannons off the baulk cushion.

before the ball. In the strokes shown on Diagrams 668 and 669 the cushion has to be taken quite a long way in front of the object ball, otherwise this ball will not be taken thinly enough for the cannon. When, however, the cushion is taken just a shade farther from the object ball than it has to be taken, the object ball may be missed altogether. If any fair player will try the stroke a few times he will find that he will be able to get it before long, because when he finds that he is taking the object ball too full he will aim to hit the cushion farther from the ball, and when he misses the ball altogether he will know that he has hit the cushion too soon. When however, the position occurs in a game the player cannot have a few trial strokes first, to find the right spot on the cushion at which to aim, consequently the stroke is a very difficult one to play in the course of a game. No side is necessary for this cannon, but just a little running side is advisable in order to render the accidental employment of any check side impossible, for check side must be avoided in all strokes in which the cue ball has to travel all round the table. A fair amount of pace is required for this cannon, consequently the stroke should be played without any drag. High pace should not, however, be used, as there is far more chance of

a good leave resulting from a successful stroke when the cue ball is struck with only a little more strength than is sufficient to cause it to travel round the table than there is when great pace is used.

In the cannon illustrated on Diagrams 668 and 669 the object ball is on the side cushion about 18 inches from the top cushion, but the same kind of cannon is quite on with the object ball much higher up or lower down the table than shown on these diagrams.

Diagram 670 illustrates a cannon with the first object ball about 12 inches higher up the table than on Diagrams 668 and 669, and Diagram 671 illus-

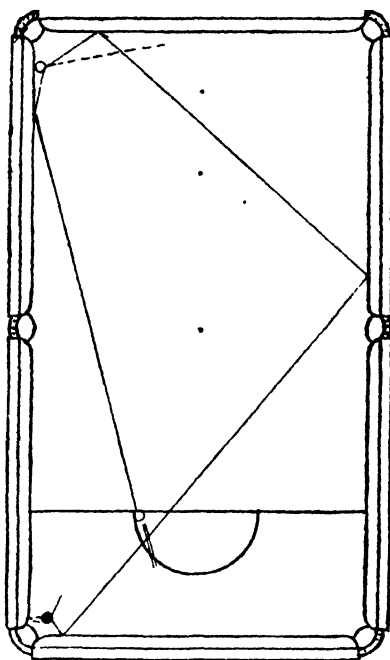


DIAGRAM 670.—An all-round cannon—hitting the cushion in front of the object ball. A difficult stroke. Object white touching the side cushion and about 6 inches from the top cushion. Red ball a few inches from the baulk pocket. Cue ball at the left end of the D line.

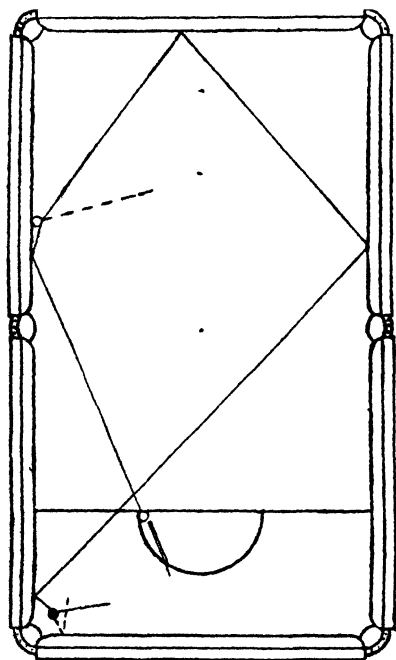


DIAGRAM 671.—An all-round cannon—hitting the cushion in front of the object ball. A difficult stroke. Object white touching the side cushion and about 48 inches from the top cushion. Red ball a few inches from the baulk pocket. Cue ball at the left end of the D line. A semi-circle at the bottom indicates the position of the cue ball when the object white is necessary for this cannon.

trates it with the object ball about a yard lower down the table than on these diagrams. These cannons are all practically the same stroke in that they are only possible when the contact which the cue ball—after first striking the cushion—makes with the object ball is a very thin one. In the cannon illustrated on Diagram 670 the object ball, although it must be taken thinly, has not, however, to be taken quite as thinly as is necessary in the position shown on Diagrams 668 and 669 with

other hand, the contact with the object ball which is necessary for the cannon illustrated on Diagram 671 is even a cannon shown on Diagrams 668 and

669, consequently the stroke shown on Diagram 671 is a very difficult one indeed, and in playing for a sufficiently thin contact a player is very apt to miss the object ball altogether. It is, however, quite possible to take the object ball *too thinly* in the positions shown on Diagrams 668, 669, 670, and 671—more especially in the three positions with the object ball well up the table. When the contact with the object ball has been too thin, the cue ball after striking the top and side cushions will always strike the baulk cushion some distance from the pocket near which the second object ball is lying, and when the cue ball barely grazes the first object ball it will strike the baulk cushion quite a long way from the second object ball. As a rule, however, when the cannon is missed in positions at all similar to the ones illustrated on Diagrams 668, 669, 670, and 671, the cause of failure is due to the contact with the first object ball not having been sufficiently thin. When the object ball is not taken thinly enough the cue ball after taking the top and side cushions always strikes the baulk-side cushion and generally at some point which is well out of baulk. When, however, the cue ball's contact with the first object ball has been only just a shade too thick to allow of its cannoning on to a ball lying near the baulk pocket, it will strike the baulk-side cushion at some point in baulk, and a cannon is thus quite possible with the second object ball quite a considerable distance from the baulk pocket.

Diagram 672 illustrates a cannon made by a stroke in which the cue ball takes the object ball lying on the side cushion very nearly as thinly as in the cannon shown on Diagrams 668 and 669, the location of the first object ball being identical in these three diagrams. The slight difference in contact is, however, shown by the alteration in the cue ball's line of travel, for whereas in Diagrams 668 and 669 the cue ball crosses the baulk line at a point which is a long way from the side cushion, on Diagram 672 the point of intersection is quite close to the cushion. On Diagram 672 the second object ball is shown at A and at B in order to give an idea of how the same stroke may serve with this ball in widely different positions. The same cannon is, of course, quite possible with the first object ball either higher up or lower down the table than shown on Diagram 672. The lower down the table, however, that this ball is, the thinner must the cue ball take it, and this applies to all cannons which are played from the D off a ball lying on the side cushion above a centre pocket on to a ball situated in baulk and on the same side of the table—as defined by the central line of the table.

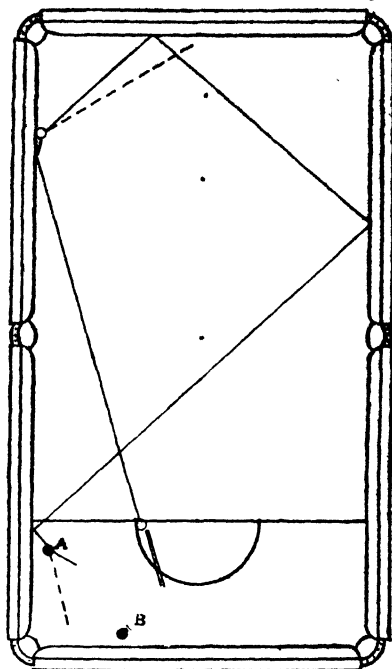


DIAGRAM 672.—A cannon—hitting the cushion in front of the object ball. Object white touching the side cushion and about 18 inches from the top cushion. Red ball at A—2½ inches from the side cushion and 23 inches from the baulk cushion. At B—20 inches from the side cushion and 2 inches from the baulk cushion. Cue ball at or near the left end of the D line.

Diagram 673 illustrates a cannon which is a variation of the stroke shown on Diagrams 668, 669, and 672. As already explained, only when the contact with the first object ball—in all these strokes in which the cushion is taken in front of the ball—is a very thin one can the cue ball cross the baulk line before striking the baulk-side cushion, and inversely when the contact with the object ball is not a thin one, the cue ball will strike the baulk-side cushion a considerable distance above the baulk line. With the first object ball situated as shown on Diagram 673, a stroke—played from the far end of the D with plenty of running side—which causes the cue ball to take the object ball—after striking the cushion in front of it—about half-ball will result in the cue ball taking the baulk-side cushion a long way out of baulk, and may even result in its taking this cushion not far from the centre pocket—as indicated by the continuous line on the diagram—thus allowing it to travel to the far part of the baulk enclosure. This stroke, however, must be played with plenty of pace, for although the cue ball will strike the top and side cushions with running side, the baulk-side cushion will be struck with check side, for what is running side off one side cushion is always check side off an opposite side cushion when a ball travels from one side of the table to another without striking the baulk or the top cushion—as the case may be—on its journey from one side cushion to the other. Even if the cannon shown on Diagram 673 be attempted without any side, the cue ball will still strike the baulk-side cushion with check side, for the simple reason that the strong contact with the top and top-side cushions imparts running side to the cue ball—often to a very noticeable extent when the cushions are very resilient. The check side with which the baulk-side cushion is struck checks the speed of the ball. Nevertheless, when the stroke has been played with plenty of pace the cue ball will travel across the baulk enclosure with sufficient speed to rebound a fair distance from the baulk cushion.

In the strokes illustrated on Diagrams 663 to 673 the first object ball is touching the side cushion, but all these strokes are also quite possible when this ball is not touching the cushion. When it is only an eighth to a quarter of an inch away from the cushion the cannon in many cases is not much more difficult than it is with the ball touching the cushion. The difficulty of these strokes—and

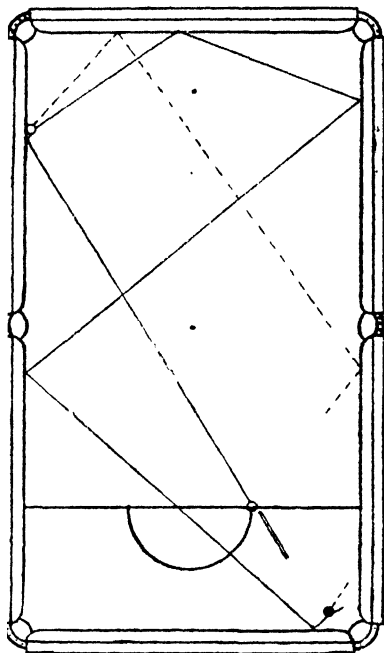


DIAGRAM 673.—An all-round cannon—hitting the cushion in front of the object ball. A difficult stroke. Object white touching the side cushion and 18 inches from the top cushion. Red ball 4 inches from the baulk cushion and 6 inches from the side cushion. Cue ball at or near the right end of the D line. The stroke is played with plenty of running side and the contact with the red ball should be about half-ball. High pace is necessary in order that the cue ball may travel the required distance.

particularly of the all-round cannons—played by hitting the cushion in front of the object ball, increases, however, with every increase of the distance between the object ball and the cushion, and when the ball is an inch or so from the cushion extremely good judgment is often required as to where the cushion must be struck to allow of the cue ball taking the object ball as full or otherwise as is necessary for the accomplishment of the stroke.

In all the cannons made by hitting the cushion in front of the object ball which have so far been described the cue ball has to be struck with running side, or if running side is not essential, without any side at all. The use of check side in these particular strokes is generally fatal, and always so when the cue ball has to travel all round the table. When, however, a position is such that the making of the cannon demands that the cue ball travels from one side cushion to another, without striking either the top cushion or the baulk cushion, the use of check side is often most advantageous, for just as running side off one side cushion is check side off an opposite side cushion when the cue ball travels straight from one cushion to the other, so under the same conditions check side off one side cushion is running side off an opposite side cushion.

Diagram 674 illustrates a position which with slight variations now and then occurs.

With the balls to the measurements given under the diagram a ball-to-ball cannon, whilst not impossible, is exceedingly difficult as screw is required, and owing to the cue ball being so close to the cushion the butt of the cue would have to be elevated very considerably for a screw stroke. A cannon is also possible off the top cushion, but such a stroke is a difficult and uncertain one. A third, and the best way of playing the cannon is shown on the diagram. The stroke is played with left side and the cushion is struck at such a point in front of the object ball as to cause the cue ball to take this ball about half-ball or slightly thinner than half-ball. Left side on the cue ball is of course, check side off the cushion, but as the cue ball after hitting the red travels across the table, the side is running side off the opposite side cushion. This cannon, played by hitting the cushion in front of the object ball, is not an easy one owing to the difficulty in gauging the correct point on the cushion which the cue ball must strike previous to its contact with the object ball. When, with the balls in the position shown on Diagram 674, the red ball is taken fuller than half-ball, the cue ball will travel across the table too squarely to allow of the cannon being made. The cue ball should not be struck below the

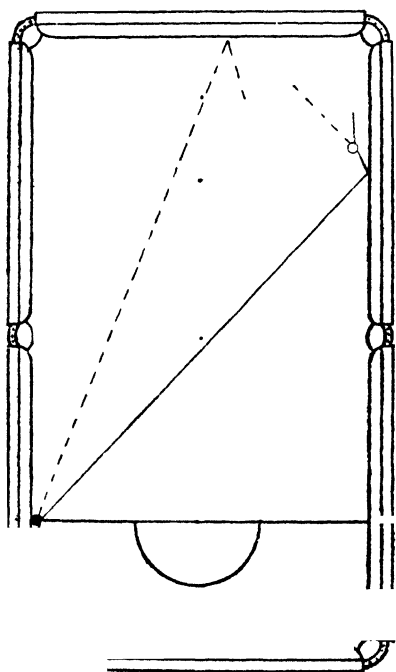


Diagram 674.—A cannon—hitting the cushion in front of the object ball. Red ball touching the side cushion and exactly on the baulk line. Object white $2\frac{1}{2}$ inches from the side cushion and 28 inches from the top cushion. Cue ball 1 inch from the baulk cushion and 4 or 5 inches from the side cushion.

centre, as any screw—and hitting a cushion in front of an object ball does not prevent screw—will cause the cue ball to travel across the table more squarely than it would otherwise have done. Although this cannon, played as illustrated on Diagram 674, is not an easy one, it is perhaps not as difficult as a cannon by a direct stroke or off the top cushion. Moreover, very good position will often be left for the next stroke as the result of a cannon made by hitting the cushion in front of the first object ball, whereas the reverse is the case as regards a cannon made by either of the other strokes.

Diagram 675 illustrates another cannon which is possible by the use of check side in conjunction with a stroke which causes the cue ball to hit the cushion in front of the object ball. As, however, the cue ball strikes the top cushion after hitting the object white, check side off the side cushion must also be check side off the top cushion, and generally speaking, strokes in which the side on the cue ball is check side off both the first and the second cushions struck by the ball are unsound. With the balls in the position shown on Diagram 675, unless check side be used, the cue ball—after any kind of contact with the object ball except an extremely thin one—will, after hitting the top cushion, always take the side cushion a long way from the centre pocket. By the alteration of the angle of rebound off the top cushion which results from check side, the cue ball can, however, be made to strike the side cushion quite close to the centre pocket without having to take the first object ball much thinner than half-ball, and thus, with the object balls in the position shown on Diagram 675, a cannon played by hitting the cushion in front of the first object ball is quite a possible stroke when the cue ball is struck with check side. Only a moderate amount of check side should be used, for check side not only alters the angle of the cue ball's rebound from a cushion, but also decidedly checks the run of the ball when the cushion is struck at an angle which is not a very oblique one. In the stroke under discussion, the cue ball after striking the top cushion has to travel a long distance before it can reach the red, and when the stroke is played with plenty of check side, the cue ball, checked by its check side—except when the contact with the object ball has been a thin one, in which case the check side will bring the ball down the table away from the side cushion—will come to rest before travelling as far down the

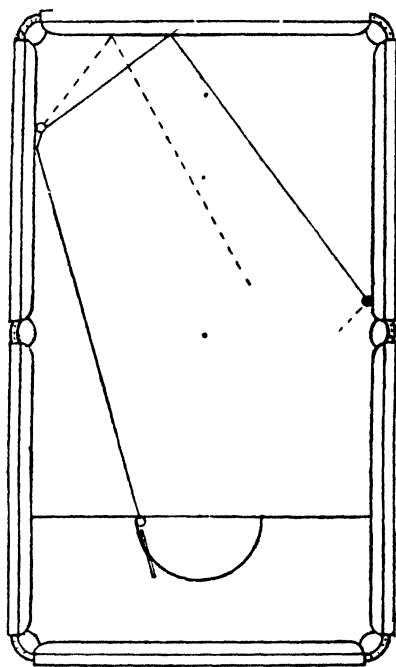


DIAGRAM 675.—A cannon—hitting the cushion in front of the object ball. Object white touching the side cushion and about 18 inches from the top cushion. Red ball touching the side cushion and just above the angle of the centre pocket. Cue ball at, or near the left end of the D line. The stroke is played with a moderate amount of check side in combination with a slightly less than half-ball contact. The cannon is also on by means of a very thin contact—hitting the cushion in front of the ball—with or without running side, according to the degree of thinness of the contact.

cannon is only possible when the contact with the first object ball is a very thin one. Only a moderate amount of check side should be used, otherwise when the contact with the object ball is a thin one the cue ball may travel down the middle of the table or even in extreme cases down the left side of the table. The position on Diagram 676 is the same as that on Diagram 673, and the cannon by the running-side stroke illustrated on Diagram 673 is a sounder stroke than the cannon by the check-side stroke illustrated on Diagram 676. Again, in the positions illustrated on Diagrams 675 and 676 a cannon is, of course, quite possible by means of a direct stroke off the white, and although such a stroke is a very difficult one it is perhaps preferable—especially in the latter position—to the check-side cushion-stroke illustrated on these diagrams. These two cushion-strokes have, however, been described in order to illustrate extreme cases of what is possible by hitting a cushion in front of an object ball. In both positions a run-through in-off from the white would to most players be an easier stroke than a cannon. With the red ball in baulk, however, the run-through has to be handled very well to leave any ordinary

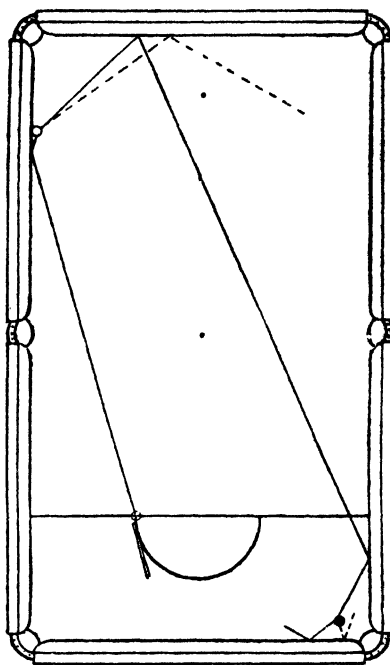


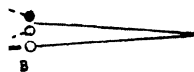
DIAGRAM 676.—A cannon—hitting the cushion in front of the object ball—by means of a thinner than half-ball stroke played with check side. Object white touching the side cushion and about 18 inches from the top cushion. Red ball 4 inches from the baulk cushion and 6 inches from the side cushion. Cue ball at or near the left end of the D. The running-side cannon from the same position—illustrated on Diagram 673—is a sounder stroke.

scoring position for the next stroke. With the object white only a very slight distance from the cushion the run-through from the D is made a good deal more difficult, whereas the cannon is still practically the same stroke.

In all the strokes which have so far been discussed in this chapter the cue ball strikes the cushion in front of the object ball, but positions often occur in which a cannon—by hitting a cushion first—demands that the cue ball shall be sent past, or away from both object balls so that it may rebound from a cushion on to the object balls. In some cases such a cannon is quite an easy stroke, but in others very good judgment as to where the cushion must be hit is required for the making of the cannon.

Diagram 677 illustrates the simplest form of these cannons made by the cue ball being played on to the cushion so that it may rebound on to the object balls. The three balls, both at A and at B, in addition to being in a straight line and parallel with a cushion, are very near to one another, consequently the cue ball has to strike the cushion pretty squarely, and generally speaking the more squarely the cushion has to be struck in this class of strokes, the easier is it to judge the point on the cushion at which aim must be taken. The cannon shown at A is, however, a very much simpler stroke than the cannon shown at B, for the simple reason that at A the cue ball, after striking the cushion, has only to travel a short distance to the object balls, whereas in the position shown at B it has to rebound half way across the table before the cannon can be made. Both at A and at B the cue ball should be struck without any side. It is, however, no easy matter to strike the cue ball without any side, and when after rebounding from a cushion the cue ball has any considerable distance to travel before it can reach an object ball, the alteration from the normal angle of rebound which results from the application—unintentional though it may be—of a small amount of side is often quite noticeable by the time the ball has travelled some distance. How difficult it is to hit the cue ball without any side may be easily proved by trying the cannon illustrated on Diagram 678. Here, by placing the cue ball on the centre of the D line and playing straight up and down the table, aiming to send the ball right over the centre, pyramid and billiard spots, a truly central stroke will cause the ball to travel over these spots on its return journey. A cannon by this straight up-and-down-the-table stroke is anything but an easy shot.

In the stroke illustrated at A on Diagram 677 a small amount of side on the cue ball may not affect the stroke very much, owing to the cue ball having to



CUSHION FIRST. POSITION A.—all three balls 14 inches from the top cushion. POSITION B.—all three balls on the central line of the table. Balls 1 inch apart in both positions.

travel only a short distance after its rebound from the cushion. In the stroke shown at B, however, a very little side on the cue ball may easily cause the cannon to be missed owing to the distance which the object balls are from the cushion. In both positions the stroke should be played with little more strength than is necessary to cause the cue ball to reach the object balls. This is, of course, in order that a successful stroke may disturb the object balls as little as possible. Sometimes, however, when the cue ball takes one of the object balls nearly full the cannon may fail simply for want of strength. The fullish contact with the object ball practically stops the cue ball when it hits the object ball very gently, whereas the same strength would have been quite sufficient for the cannon had the object ball hit by the cue ball been taken somewhat less fully. It is therefore advisable to make an allowance for a possible fullish contact with the object ball on to which the cue ball rebounds from the cushion. Especially is this the case when a line drawn through the centres

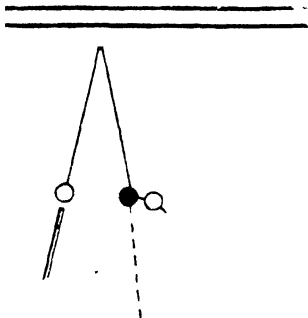


DIAGRAM 679.—A cannon—hitting the cushion first. Cue ball 10 inches from the side cushion and 10 inches from the top cushion. Red ball 10 inches from the side cushion and $13\frac{1}{2}$ inches from the top cushion. Object white 21 inches from the side cushion and $14\frac{1}{2}$ inches from the top cushion.

DIAGRAM 678.—A cannon by a straight up-and-down-the-table stroke. A difficult stroke. Object balls in the D two inches apart and one on each side of the central line of the table.

of the object balls is not parallel to the cushion struck by the object ball.

Diagram 679 shows such a position. Here, should the cue ball, after its rebound from the cushion, take the red ball thinly the cannon will be made even though the strength of the stroke has been little more than sufficient to cause the cue ball to reach the red. On the other hand, should the cue ball take the red nearly full the cannon will be missed, unless it has travelled to it with sufficient speed to allow it to *run through it*.

Diagram 680 shows further examples of cannons played off a cushion. The strokes illustrated on this diagram are

on Diagram 677. They are, however, much more difficult owing to the cue ball being, in both positions, so much farther from the object balls than in the

positions shown on Diagram 677. When the cue ball is quite near the object balls, the angle at which it has to strike the cushion is not far short of a right angle, but the more the cue ball is to the right or the left of the object balls, the more acutely has the cue ball to be directed to the cushion in order to allow of its rebounding on to the object balls. In the cannons shown on Diagram 680 the cue ball has to strike the cushion quite a long way from the object balls—in fact, the point on the cushion which must be struck by the cue ball lies roughly half-way between the cue ball and the space immediately between the object balls—and very good judgment is consequently required to determine the exact spot on the cushion which must be struck, especially as an error of an inch, or even less, may easily make all the difference between making and missing the cannon. It may be mentioned here, that even when the cue ball is struck quite centrally the angle of incidence and reflection in strokes of the nature of those illustrated on Diagram 680 are seldom quite equal. When the cue ball strikes the cushion at an angle of about 45° without much speed, the tendency is for the angle of reflection to be slightly more acute than the angle of incidence, that is to say the effect is as though the stroke had been played with just a little running side. The reverse is, however, the case when a fast stroke is used.

In the strokes illustrated on Diagrams 677, 678, and 680 the cue ball has to rebound from the cushion directly on to the object balls in order for the cannon to be made. When, however, the object balls are close to a cushion—one object ball being between the cushion and the other object ball—the cannon can often be made off two cushions.

Diagram 681 illustrates one of these strokes in which the cue ball strikes two cushions before hitting the object balls. Of course, the cannon can be made off one cushion only, but it is somewhat easier when played off two cushions. Not only this, but the after-position is generally better when the cannon is made off the two cushions than it is when only one cushion is struck previous to the cue ball reaching the object balls.

In the position shown on Diagram 681 no side is required for the cannon, no matter whether the stroke is played off one cushion only, or off two cushions. The side cushion must of necessity be struck a little higher up when playing off two cushions than when playing for a rebound direct on to the balls, but all that

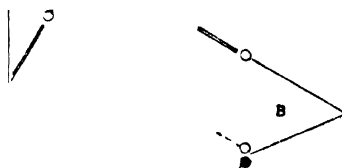


DIAGRAM 680.—Cannons—hitting the cushion first. Position A.—all three balls 14 inches from the top cushion. Cue ball 7 inches from the side cushion. Object white 22 inches from the side cushion. Red ball 1 inch from the white. Position B.—all three balls 24 inches from the side cushion. Cue ball 23 inches from the top cushion. Object white 44 inches from the top cushion. Red ball 1 inch from the white.

the player has to judge when playing without side is the point on the cushion to which the cue ball must be directed.

Positions, however, occasionally occur with all three balls close together in which a cannon, by a rebound off a cushion on to the object balls, is only possible by the use of side.

Diagram 682 illustrates one of these positions. Here, owing to the cue ball being so close to the object white and also to its being slightly behind this ball, as viewed from the side cushion, it is quite impossible to hit the cushion anywhere near the point which would have to be hit for a cannon without any side. In fact, owing to the object white being

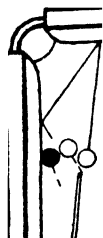


DIAGRAM 682.—A cannon—hitting the cushion first. Red ball and cue ball in a line parallel to the side cushion and about 15 inches from this cushion. Object white about $\frac{3}{8}$ inch from the red ball and $\frac{1}{8}$ inch from the cue ball and $\frac{3}{4}$ inch nearer the side cushion than the cue ball. Left side is necessary for the cannon.



DIAGRAM 681.—A cannon—hitting the cushion first. All three balls in a straight line and about 29 inches from the side cushion. Red ball touching the top cushion. Object white 1 inch from the red. Cue ball 1 inch from the white.

in the way, the cue ball cannot even be made to travel to the side cushion on a line which is parallel to the top cushion. The use of side, however, enables the cannon to be made notwithstanding that the side cushion has to be struck at a point which is lower down the table than the point on the cushion which immediately faces the cue ball. Plenty of side allows of the cannon being made off the top cushion as shown on the diagram.

Diagram 683 illustrates a position which although not of frequent occurrence does sometimes happen. Here, the cannon can be made off either the top cushion or the baulk cushion. The cue ball can be got at quite easily for a stroke off the top cushion, whereas

unless the player is left-handed or can play with his left hand, the rest has to be used for the stroke off the baulk cushion. Notwithstanding this, the cannon should be played off the baulk cushion as there is far less likelihood of its being missed when played off this cushion than there is when it is played off the top cushion. The centre pocket may easily be in the way for a stroke off the top cushion, unless the cue ball is travelling directly on to the object balls, whereas when the stroke is played off the baulk cushion the cue ball will often strike the side cushion some distance

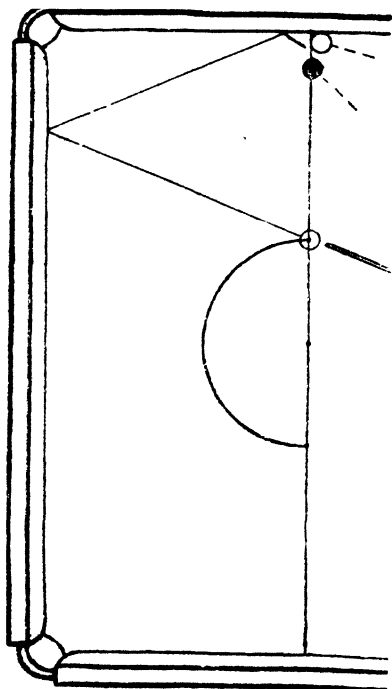


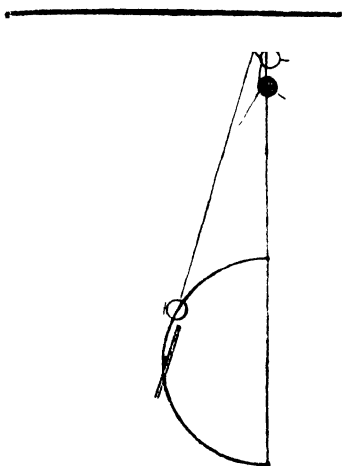
DIAGRAM 684.—A cannon from hand played off the baulk cushion. A little-known stroke. A cannon is only a legitimate stroke when the cue ball hits the ball out of baulk before touching the other ball. Red ball $2\frac{3}{4}$ inches from the cushion and *exactly* on the baulk line. Object white touching the cushion and *exactly* half a ball higher up the table than the red. The near edge of the object white is thus exactly over the baulk line. The cue ball should be placed at the near end of the D line.

DIAGRAM 683.—A cannon—hitting the cushion first. All three balls in a line parallel with the baulk line. Red ball touching the cushion and about 12 inches from the centre pocket. Object white 1 inch from the red. Cue ball 2 inches from the white.

from the object balls before hitting them. In the stroke illustrated on Diagram 683 the cue ball strikes the side cushion at a point which is about ten or twelve inches from the object balls. The same kind of stroke off the top cushion would mean the cue ball catching the angle of the centre pocket and the consequent failure of the stroke. The fact that the rest has to be used for the stroke off the bottom cushion should make little or no difference to any player, for no side has to be used and the cue ball has to be struck without much strength in order that a successful stroke may leave all three balls close together.

Diagram 684 shows a position which although of rare occurrence does occasionally happen. The red is a line ball—that is to say it is exactly on the

baulk line—and is consequently in baulk, and the object white is touching the cushion and is half a ball higher up the table than the red, and is thus easily out of baulk. With the cue ball in hand, the position will, to the majority of players, appear a very awkward one, since unless the stroke be played off the top cushion the object white must be hit first, for any score to be made. Most players—though strange to say not all—are aware that when playing a stroke off a ball which, though out of baulk, is not entirely clear of the baulk line the cue ball can be played on to any part of the object ball, and that the cue ball need not necessarily go out of baulk, since in hitting the object ball it has hit a ball out of baulk. Very many players—including not a few good players—are, however, quite unaware that when playing from hand it is quite permissible to strike a cushion in baulk in order to hit a ball which is out of baulk, and if a cannon—or any other shot—is made by a stroke played off a cushion in baulk on to a ball out of baulk, such a shot is a perfectly legitimate one. In the cannon illustrated on Diagram 684 the cue ball is aimed at the baulk cushion, the direction of aim being such as to cause it to rebound on to the white either directly or—as shown on the diagram—off the side cushion. This stroke, whilst not exactly an easy one, should pre-



sent no great difficulty to any fair player, as there is some little latitude as to the point on the baulk cushion which must be struck by the cue ball in order for the cannon to be made. For this stroke the cue ball should be spotted at the extreme end of the D line and a plain-ball stroke should be used. When the stroke is played with little more strength than is necessary to reach the objects balls, good position will generally result from the cannon—especially when the cue ball takes the side cushion in front of the first object ball—for the three balls will be left in a cluster. The use of the rest is necessary for this cannon unless the player can play the stroke with his left hand. With the same position on the other side of the table the stroke can be played with the right hand by leaning over the table, but even here the half butt is preferable, for by standing at the far end of the table it is much easier to judge the point on the baulk cushion at which aim should be made than it is when leaning over the table.

Diagram 685 illustrates a position which is only a very slight modification of that shown on Diagram 684, but the fractional difference in the location of the object white as compared with its position on Diagram 684 allows of the cannon being made by means of a stroke

played on a cushion in baulk. A little-known stroke. Position of the red ball exactly as on Diagram 684. Object white touching the cushion but $\frac{1}{8}$ inch lower down the table than on Diagram 684. $\frac{3}{8}$ inch of the ball is thus over the baulk line. Cue ball on the D semicircle.

which—as shown on the diagram—causes the cue ball to hit the side cushion very close to the white ball previous to its hitting this ball. Here again, the cue ball strikes a cushion in baulk, but if after striking this cushion it hits the object white and then the red the cannon is a legitimate one as the cue ball has struck the ball out of baulk before hitting the ball in baulk. For this cannon the cue ball must be placed on the D semicircle—as shown on the diagram—plenty of side must be used, and the line of travel to the cushion must be such that the cue ball passes very close to the red. In order to allow of this cannon being made the cushion must be struck very close to the object white, otherwise no matter how much side has been imparted to the cue ball the object white cannot be touched, and the cue ball cannot take the cushion very close to the white unless it passes the red with very little indeed to spare. In the position shown on Diagram 684 the cue ball cannot hit the object white off the cushion—except by a massé stroke, which need not be considered here—owing to the impossibility—by reason of the red ball being in the way—of hitting the cushion as close to the ball as is required to allow of the cue ball hitting it, but as

soon as the object white is moved the very slightest distance lower down the table which is shown by a comparison of Diagrams 684 and 685 a cannon becomes possible off the side cushion, as well as off the baulk cushion.

Diagram 686 shows a position which is a very slight modification of the one illustrated on Diagram 685. The object white, although still out of baulk, is here only just out of baulk. By reason, however, of its being almost a line ball it is possible—by spotting the cue ball on the D semicircle as shown on the diagram—to hit it thinly by means of a direct stroke, thus allowing a cannon to be made off the cushion by a stroke which causes the cue ball to hit the object ball before the cushion. A cannon could, of course, also be made by the same kind of stroke that is illustrated on Diagram 685 and also by the stroke illustrated on Diagram 684.

Diagrams 684, 685, and 686 afford a nice object lesson as to the difference that quite a fractional variation in the position of only one of the object balls may make as to the stroke which must be played—even when the cue ball is not on a fixed spot—in order for the to have any likely chance of scoring. In all three diagrams the position of the red ball is exactly the same, and in each diagram the object white is touching the side cushion, but whereas in the position shown on Diagram 686

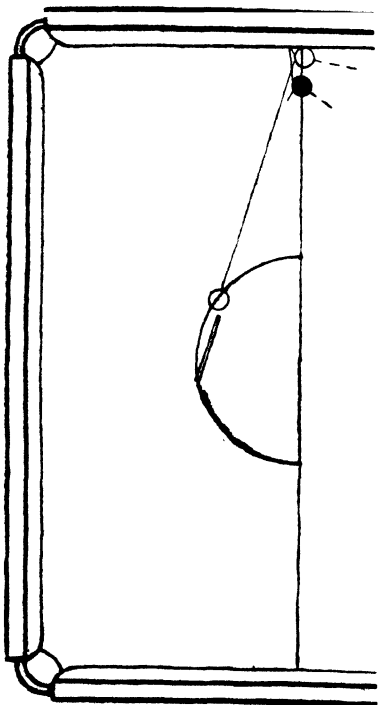


DIAGRAM 686.—A cannon—hitting the object ball before the cushion. Red ball exactly a line ball and $2\frac{3}{4}$ inches from the cushion as on Diagrams 684 and 685. Object white touching the cushion but $\frac{1}{2}$ inch nearer to baulk than on Diagram 684. $\frac{3}{4}$ inch of the ball is thus over the baulk line. Cue ball on the D semicircle.

a cannon is quite possible by three different kinds of strokes, in the position illustrated on Diagram 685, owing to the object white being a shade higher up the table than on Diagram 686 only two of these strokes are available, and in the position illustrated on Diagram 684, owing to the object white being fractionally higher up the table than on Diagram 685, but one of these strokes is available.

Diagram 687 illustrates an awkward placing of the balls which with slight variations as to the distance of the balls from the side cushion, the top cushion, and from each other, now and then occurs. The cannon off the side cushion shown on the diagram is a difficult one, owing to the nicety of judgment required as to the point on the cushion which the cue ball must be made to strike. In order for the cannon to be

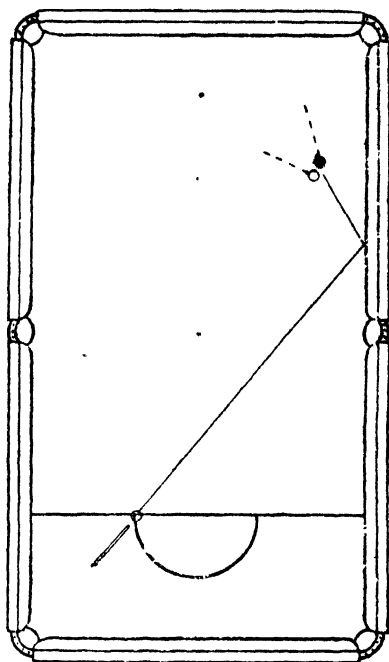


DIAGRAM 687.—A cannon—hitting the cushion first. A difficult stroke to judge. Red ball 9 inches from the side cushion and 31 inches from the top cushion. Object white 10½ inches from the side cushion and 33½ inches from the top cushion.

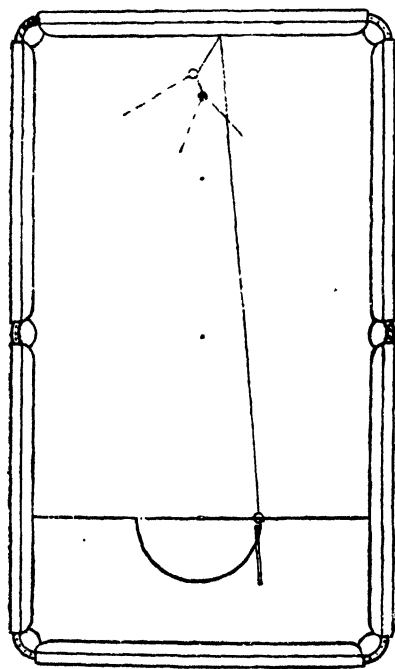


DIAGRAM 688.—A cannon—hitting the cushion first. Red ball on the spot. Object white 6½ inches from the top cushion and 32½ inches from the side cushion.

made the cue ball must strike the cushion quite a long way from the object balls, and as a rule failure to get this cannon results from the cue ball having struck the cushion too high up. Whenever the cue ball, after its rebound from the cushion, hits only the farther object ball it is clear that the cushion has not been hit far enough from the balls. There is no need to play this cannon with any side, but when a little running side is used the cushion must be struck a little below the point which is the correct one for a plain-ball stroke.

Diagram 688 shows a not uncommon placing of the object balls. This position is sometimes due to a badly-played in-off from the white. The red is on

the D owing to the object white not being sufficiently behind the red.

Playing from the D, the only strokes at all reasonably on are a screw from the red into one of the top pockets and the cannon shown on the diagram, and as the screw from the red is always an uncertain stroke, even at the hands of the very best players, the cannon is the correct stroke to play. For this cannon the cue ball, spotted at or near the end of the D line, should be struck with a fair amount of side, aim being taken at a point on the top cushion some little distance to the right of the object white.



Of course, the more side that is used for the stroke, the farther from the object white must the cushion be struck, but the stroke is easier when played with a moderate amount of side than with a lot of side. It is impossible to know what kind of after-position will result from a successful stroke, as so much depends on the pace at which the stroke is played and upon how the cue ball catches the object balls—and in particular the red ball. Good position is, however, more likely to result from a stroke played without much pace than from a stroke which scatters the balls.

Diagram 689 shows a variation of the stroke shown on Diagram 688. Here,

DIAGRAM 689.—A cannon—hitting the cushion first. Red ball on the spot. Object white $8\frac{3}{4}$ inches from the top cushion and $33\frac{1}{2}$ inches from the side cushion.

owing to the object balls being so close to one another a cannon cannot be safely played by exactly the same stroke as the one illustrated on Diagram 688, for although it is quite possible to get the cannon without causing the cue ball to strike the top cushion very far to the right of the object white, the stroke is made less difficult by taking the top cushion a considerable distance to the right of the balls—as shown on the diagram—the cue ball, of course, being struck with plenty of side. In the position shown on Diagram 689, should the cue ball strike the top cushion only a little to the right of the object balls, the cannon can only be made when the contact with the white ball is a thin one; this is because, viewed from any point on the top cushion which is only a little to the right of the object balls, the red is partially covered by the object white. When, however, the cushion is struck considerably to the right of the object balls the red is no longer covered by the object white—or at least not to the same extent as in the other case—consequently almost any kind of contact with the red ensures the cannon being made. This stroke should be played with plenty of drag as well as side, as in long-distance strokes which have to be played without much pace, the cue ball retains side much longer when the side has been imparted in combination with drag than when no drag has been used.

Diagram 690 illustrates a cannon off the upper angle of a centre pocket, the cue ball being in hand and both the object balls being in baulk. This cannon, although always a possible stroke is in the nature of a fancy stroke because of its unreliability. Playing from the same spot in the D, a difference

of the merest fraction of an inch in the point of contact on the angle may very considerably alter the line of the cue ball's rebound, and a variation of strength will also alter this line of rebound. In fact, although the cannon illustrated on the diagram may sometimes come off, if the stroke be played a number of times it will be found that the cue ball may cross the baulk line at any point on the D line, and may even cross this line at either side of the D, although in every case it may have struck the angle at a point very near the centre. The shape of centre-pocket angles often varies on different tables, and the more curved the angle is the greater

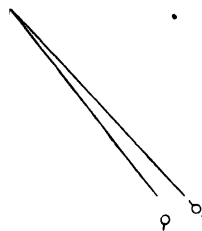


DIAGRAM 690.—A fancy cannon played off the upper angle of a centre pocket.

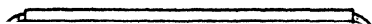


DIAGRAM 691.—A cannon played off a centre-pocket angle. A much more certain stroke than the one illustrated on Diagram 690. Object white $61\frac{1}{4}$ inches from the baulk cushion and $12\frac{1}{4}$ inches from the side cushion. Red ball $59\frac{1}{2}$ inches from the baulk cushion and $10\frac{1}{2}$ inches from the side cushion. Cue ball $58\frac{1}{2}$ inches from the baulk cushion and 8 inches from the side cushion.

will be the difference between the results of two or more strokes which, as regards the point on the angle which the cue ball has struck, have apparently been played in exactly the same way. Those players who played a game or two on the oval table, or on any other freak table with curving cushions, will remember the eccentric angles which these cushions threw, and how slight differences in the angle of incidence sometimes caused wide alterations in the angle of rebound. What applied to these cushions applies equally to the angles of a centre pocket, for although the curve of a centre-pocket angle at its centre may not be very noticeable when standing at the baulk end of the table, it is very extreme. In fact, were a long cushion made with a curvature which only slightly approached that of an ordinary centre-pocket angle, the curvature of such a cushion would still

be quite pronounced. It is true that the cushions of the freak tables had a concave curvature, whereas a centre pocket angle has a convex one. A convexly-curved cushion would, however, throw just as eccentric angles as the concavely-curved ones did, though of course the throw-off angles of the one cushion would be totally different from those of the other cushion, and were it not an obvious impossibility to build a billiard table with cushions of pronounced convexity, no doubt some brilliant genius would have added another monstrosity to the freak tables which were played upon by professionals—for large monetary considerations—and extensively advertised in a vain and futile attempt to displace the ordinary regulation table.

Diagram 691 shows a cannon which is of exactly the same nature as the stroke illustrated on Diagram 690. Whereas, however, the stroke shown on the latter diagram is, as already stated, very little if at all removed from the category of fancy strokes, the stroke illustrated on Diagram 691 is a sound enough stroke to play. It is true that all that has been said as to the eccentric angles which are thrown by a centre-pocket angle apply just as much here as they do in the stroke shown on Diagram 690. The nearness, however, of all three balls to the centre-pocket angle makes the cannon illustrated on Diagram 691 a very different



stroke from the cannon shown on Diagram 690. In the first place, owing to the cue ball in Diagram 691 being only a short distance from the angle it is easier to judge what point on the angle should be struck than when playing from the D, and also for the same reason to strike the angle at the desired point, and secondly, as the cue ball has only a short distance to travel to the object balls after its rebound from the angle, there is far more latitude for differences in the cue ball's line of rebound without the cannon being missed, than there is when the cue ball has to travel all the way to the D after striking the angle. In Diagram 691 the ball to the left is the cue ball, but the cannon is equally on off the angle with the ball to the right as the cue ball.

Diagram 692 illustrates a cannon which is a variation of the cannon shown on Diagram 691. If the position is set up to the measurements given under the diagram it will at once be seen how very safe it is. The cannon shown on the diagram is not a reliable one owing to the various directions in which the cue ball may rebound from the angle of the pocket. Should the cue ball take the angle anywhere near its centre it will rebound into the upper half of the table, but when the angle is taken close to

off a
 from the side cushion and opposite the spot.
 Red ball $8\frac{1}{2}$ inches from the side cushion
 and $62\frac{1}{2}$ inches from the baulk cushion.
 Object white 1 inch from the red. All
 three balls in a dead straight line.

the point where the cushion proper begins a fair chance of the cannon being made always exists.

Diagram 693 illustrates a cannon off the angles of a corner pocket. With the balls situated to the measurements given under the diagram no kiss-cannon is possible, nor does the position of the object white admit of the cue ball hitting the cushion close enough to the red ball to allow of a cannon by this method of play. A cannon off the opposite side cushion is, of course, quite a possible stroke, but such a stroke requires very good judgment as to where the cushion must be hit. The cannon shown on the diagram although a somewhat uncertain stroke will often come off. When the stroke is correctly played the cue ball

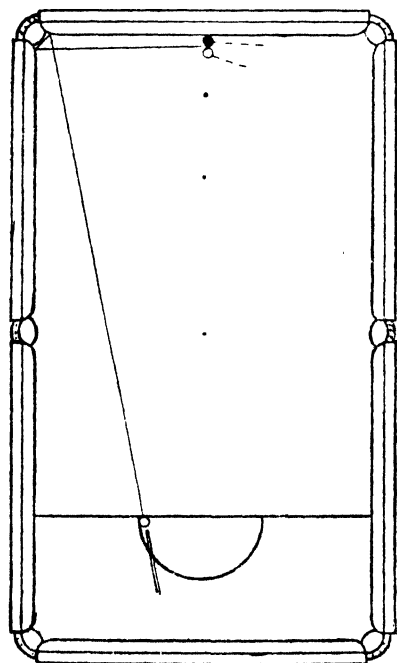


DIAGRAM 694.—A cannon from the D off the two angles of a top pocket. A much more difficult stroke than the cannon shown on Diagram 692. Red ball touching the cushion and right behind the spot. Object white also on the central line of the table and all but touching the red.

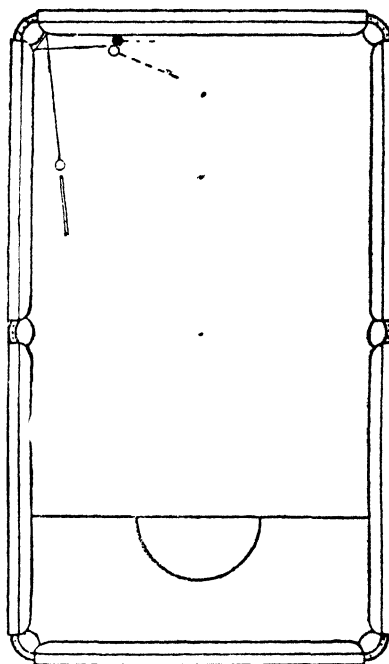
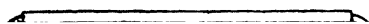


DIAGRAM 693.—A cannon played off the two angles of a corner pocket. Red ball touching the cushion and about half-way between the corner pocket and the point on the cushion immediately behind the spot. Cue ball 4 inches from the side cushion and 32 inches from the top cushion. Object white in a dead straight line with the other two balls and about one thirty-second of an inch or less from—but not touching—the red.

rebounds from the upper angle of the pocket on to the lower angle and is then thrown straight across the table. The uncertainty of the stroke lies in the fact that the cue ball is not always thrown straight across the table after its contact with the lower angle of the pocket. The direction in which it is thrown depends upon what part of the lower angle it has struck, and this point of contact is in turn dependent upon what point of the upper angle has been struck. The cut of the pocket affects the stroke, but this cannon is quite on, on any table. It is, however, an easier stroke when the pockets are very tight than when the reverse is the

case. Should the object balls be touching, this cannon would be too risky a stroke to play, for in the event of the cue ball not hitting either ball, the red ball would be spotted on the billiard spot and the white ball on the centre spot, and the opponent would play from the D.

Diagram 694 illustrates a cannon from the D off the angles of a top pocket which is exactly the same kind of stroke as the cannon shown on Diagram 693. It is, however, a much more difficult stroke owing to the greater distance which the cue ball has to travel both before and after its contact with the angles of the pocket. Nevertheless, the stroke is quite on, and illustrates a possible way of scoring from a seemingly absolutely safe position. A cannon is also possible from the D off the side cushion, but such a stroke is an extremely difficult one. In the ordinary way the best thing to do would be to give a safety miss, or three-miss in the case of the object balls touching—for a miss with the object balls touching would mean that the opponent would play from the D with the red on the spot and the object white on the centre spot. It may happen, however, that a player has made a big break and has no thought of playing for safety.



When this is the case, a possible way of scoring from some very awkward position may be of great value.

Diagram 695 shows a fluke which is of common occurrence, and is given here as it further illustrates the way the cue ball is often thrown across the table from the angles of a top pocket. The player has played a jenny and the ball has rebounded from the upper angle on to the lower angle and thence straight across the table. It is not, of course, necessary for the stroke to be a jenny in order for this fluke to occur, for it often takes place when playing an ordinary top-pocket in-off from the D. It is, however, somewhat more likely to occur when playing a jenny with the object ball close to the side cushion than when playing any other stroke. This is because the cue ball in this jenny travels almost parallel with the side cushion after its contact with the object ball. Although this cannon is of course a fluke, good players know that it is always on, and they sometimes play a jenny which may be a very difficult one when the second object ball is so situated that a cannon is quite a possible stroke should the jenny be only missed by a little.

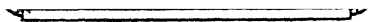


DIAGRAM 695.—An example of a fluke which often occurs when a jenny has been played. The cue ball catching both angles of the pocket is thrown across the table—though not necessarily straight or nearly straight across—and when the other ball happens to lie in its path the result of the stroke is a cannon.

CHAPTER XXXII.

GATHERING CANNONS.

A stroke which all good players constantly play is a gathering cannon, which, as the name implies, is a cannon which brings or gathers all three balls—or at least the object balls—together. For the purpose of classification gathering cannons may be broadly divided into two classes, viz. :—

Cannons which bring the object balls together from positions a considerable distance—or even a long distance—apart and

Cannons which separate the object balls already lying close to, or at no great distance from each other, to bring them together again.

The strokes which bring the object balls together from positions distant

from each other are generally—though not always—of the drop-cannon variety, and as drop-cannons will be discussed in a later chapter no further reference to these cannons is necessary here. A gathering cannon which brings all the balls together from a position in which the balls—or at least the two object balls—were already close together, or at no great distance from each other, may be a half-ball stroke, a run-through, or a screw. When such a stroke is a half-ball one the balls must be fairly close to a cushion, and the stroke is generally an easy one, for as the result of a half-ball contact the cue ball and the object ball travel at about the same speed. Even when the gathering stroke is a run-through or a screw, the stroke, to bring the balls together, may be an easy one if by reason of all the balls being close to a cushion very little strength is necessary for the cannon. The strokes, however, which will be discussed in this chapter, whilst in no case beyond the compass of any fair player, all require careful handling, for as in every case the first object ball has either to travel with a fair amount of pace, or has to

more than one cushion in

that it may come to rest close to the second object ball, the strength at which the stroke must be played has to be pretty accurately gauged.

Diagram 696 shows a position for a simple run-through cannon. When the



Diagram 696 shows a position for a simple run-through cannon. Cue ball 28½ inches from the side cushion and 26 inches from the baulk cushion. Object white 22½ inches from the baulk cushion and on the central line of the table. Cue ball on the D semicircle, 22½ inches from the side cushion and 27 inches from the baulk cushion.

cue ball cannons full or nearly full on to the object white it will come to rest almost immediately after touching the ball, provided that the stroke has not been played with very much pace. The correct pace is, of course, the pace which is required to cause the red ball to travel to the cushion and back to somewhere near the middle of the D, as shown on the diagram. The ideal leave shown on the diagram cannot always be obtained, for even two extremely well-played strokes will not give absolutely identical leaves, but good position will almost always result from a good-strength stroke.

Diagram 697 illustrates another gathering stroke by means of a run-

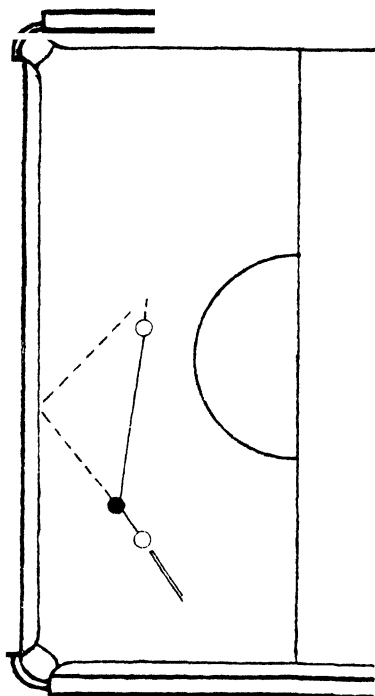


DIAGRAM 697.—A gathering stroke by means of a run-through cannon. Red ball $9\frac{1}{2}$ inches from the baulk cushion and 20 inches from the side cushion. Object white $12\frac{1}{2}$ inches from the baulk cushion and 32 inches from the side cushion. Cue ball $12\frac{1}{2}$ inches from the baulk cushion and 16 inches from the side cushion.

8



means of a run-through cannon. Red ball 18 inches from the side cushion and 49 inches from the baulk cushion. Object white $23\frac{1}{2}$ inches from the side cushion and 36 inches from the baulk cushion. An alternative stroke is illustrated on Diagram

699.

through. The red ball has to be taken very full in order that it may be given correct direction. By means of a good-strength stroke all three balls may be left quite close together. With slight variations of the position a gentle kiss may take place between the object balls just after the cannon has been made, but such a kiss will not prevent the grouping together of the balls and may even assist in this.

Diagram 698 illustrates a gathering stroke of the run-through order in which considerable pace is required in order to bring the first object ball back to the second ball. With the object balls to the measurements given under

the diagram quite a simple cannon is on from the left end of the D, but though by such a stroke the red can be placed in good position when the cue ball takes it well, the object white is sent into very bad position. The cannon shown on Diagram 698 is easy enough just as a stroke, but it requires very well handling to get correctly on to the red when playing with sufficient strength to bring the object white right down the table again. Also, in order to have the leave shown on the diagram the object white has to be given a very correct line of travel. The great thing in the stroke, however, is to get correctly on to the red, for a good contact with the red means that this ball will be well placed in relation to the centre pocket, and good position for the next stroke will thus be assured quite irrespective of the white ball's resting place. An attempt should, however, always be made to bring the object white down the table again, for in the event of the cue ball not getting correctly on to the red, an easy cannon or even an in-off from the white into the centre pocket may be on if the white has been brought down again. As a very fair amount of pace has to be used in order to bring the object white down again, the cue ball may easily travel to the red with more pace than it must do if the red ball has only to be sent forward a short distance. The pace at which the cue ball travels after a full or nearly full contact with an object ball is, however, regulated by the height at which it is struck, and in the stroke under discussion if it is struck at a point only very slightly above its centre it will travel to the red with correct speed when enough pace has been used to bring the object white as far down the table as the centre pocket.

A good alternative stroke to the one shown on Diagram 698 is a run-through cannon from a spot on the D line not far from its centre. This alternative stroke, which is shown on Diagram 699, is also a gathering stroke when played with good strength. It is a much easier stroke to play than the one illustrated on Diagram 698, and though it does not drive the red to the pocket it is even for very fair players a much safer stroke to play than the better positional stroke on Diagram 698.

Diagram 700 shows a position for a simple screw-back cannon. The strength of the stroke must, however, be very well judged in order to leave the object balls close together for the next stroke. Not only this, but good direction must be given the red ball as well. A screw cannon with the object balls as near to one another as on Diagram 700 can be made by contacts which vary considerably as regards the degree of fulness, and as different contacts must of

to the object ball, the gathering of the balls together depends as much upon



Diagram 699. An alternative stroke to the one illustrated on Diagram 698. Object balls situated as on Diagram 698.

correct contact as upon correct strength. When the stroke is very well played the cue ball cannons quite gently on to the object white and thus moves it very little, and the red ball travels back just up to the white—probably kissing it—and thus all three balls are bunched together.

Diagram 701 illustrates another gathering-stroke position. The cannon by means of screw is quite easy just as a stroke, but to bunch the balls together as the result of the cannon is quite another matter. Only a very full contact—just slightly less than full ball—can give the object white the correct line of travel, and the cannon is therefore a stun stroke. The cue ball should

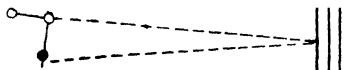


DIAGRAM 701.—A gathering stroke by means of a screw cannon. Red ball $10\frac{1}{2}$ inches from the side cushion and $39\frac{1}{2}$ inches from the top cushion. Object white 13 inches from the side cushion and $33\frac{1}{2}$ from the top cushion. Cue ball 6 inches from the side cushion and $31\frac{1}{2}$ inches from the top cushion.

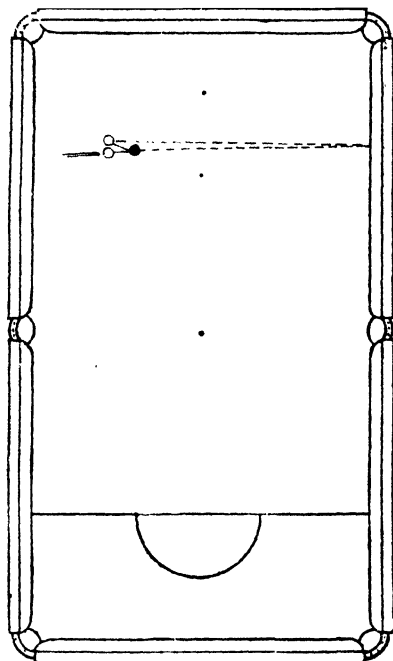


DIAGRAM 700.—A gathering stroke by means of a screw-back cannon. Red ball $25\frac{3}{4}$ inches from the side cushion and $31\frac{1}{2}$ inches from the top cushion. Cue ball 21 inches from the side cushion and $31\frac{1}{2}$ inches from the top cushion. Object white the same distance from the side cushion as the cue ball and $\frac{1}{4}$ inch above this ball.

be struck only just a shade below the centre, otherwise a very full contact with the object ball would cause the stroke to be overscrewed. Hitting the cue ball only fractionally below the centre, instead of low down, causes it to be stunned when it takes the object white almost full, so that, though the stroke be played with sufficient strength to cause the object white to travel nearly two widths of the table, the cue ball travels to the red with little more pace than is necessary to reach it and thus remains close to it, to be joined by the object white when the strength of the stroke has been very good. No player can expect to always get ideal position as the result of this stun stroke, nevertheless although it is quite impossible to always bring the object

balls as close together as indicated by the intersected lines on the diagram, very good position will almost always result from this stroke when both the contact and the strength have been good.

Diagram 702 illustrates how the object balls may be brought together by means of a slow-screw stroke. Here again the object white has to be taken very full in order to give it the correct direction off the two cushions which it must strike previous to coming to rest close to the red. A well-played stroke causes the cue ball to travel to the red without much pace and brings the white to the red. Even if the object balls are

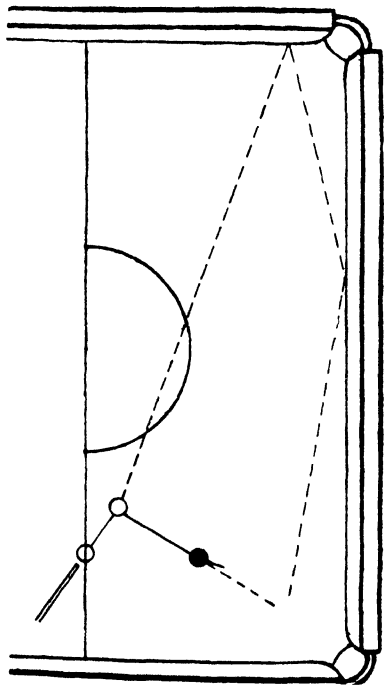


DIAGRAM 702.—A gathering stroke by means of a slow-screw cannon. Red ball $8\frac{1}{2}$ inches from the side cushion and 8 inches from the top cushion. Object white 1 inch from the side cushion and exactly opposite the spot. Cue ball $4\frac{1}{2}$ inches from the side cushion and $18\frac{1}{2}$ inches from the top cushion.

not left quite close together, an easy stroke will almost always be left to continue with.

Diagram 703 shows a stun stroke which, as indicated by the intersected lines, drives the red towards a baulk pocket and causes the object white to strike the side and baulk cushions and finally to come to rest close to the red ball's new position. The leave shown on the diagram, though an actual result from a stroke played on the table, is an ideal one, and no exact leave can, of course, be relied upon when playing this stun stroke. If, however, the strength of the stroke and the direction given to the object white are both good, an easy-scoring position will almost always result from the stroke.

DIAGRAM 703.—A gathering stroke by means of a screw cannon. Red ball $11\frac{1}{2}$ inches from the side cushion and 15 inches from the baulk cushion. Object white $17\frac{1}{2}$ inches from the side cushion and 26 inches from the baulk cushion. Cue ball $10\frac{1}{2}$ inches from the side cushion and exactly on the baulk line.

Diagram 704 illustrates a stun stroke at the top of the table which when very well played may result in all three balls coming to rest pretty close to one another. The great thing in this stroke is giving the red ball good direction so that it may travel to the neighbourhood of the top corner pocket. Giving the red ball the good direction indicated by the intersected line on the diagram is not nearly as easy as it may appear to be from just looking at the diagram. The stroke has to be played with plenty of pace in order to bring the ball up the table again, and when a stroke has to be played with plenty of pace it is not nearly as easy to get accurately on to the object ball—even though the cue ball is only a short distance from it—

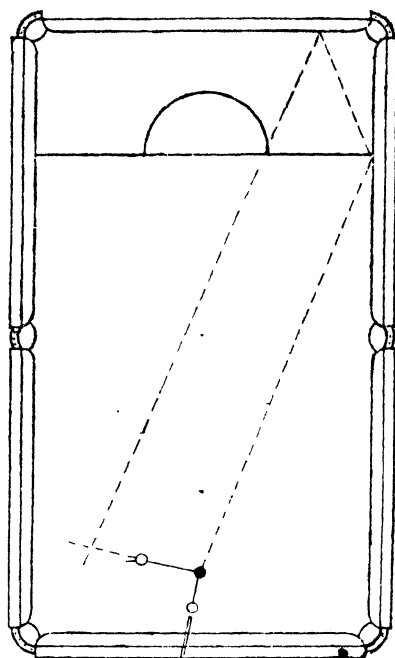


DIAGRAM 704.—A gathering stroke by means of a screw cannon. Red ball on the spot. Object white 13 inches from the top cushion and 24 inches from the side cushion. Cue ball $4\frac{1}{2}$ inches from the top cushion and $32\frac{1}{2}$ inches from the side cushion.

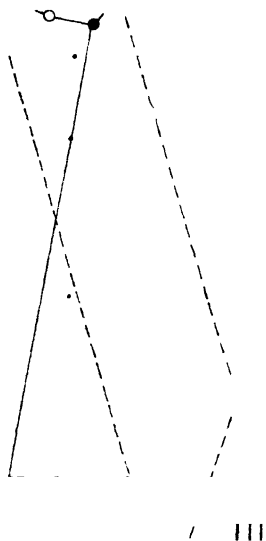


DIAGRAM 705.—A gathering stroke by means of a strong screw cannon. Red ball 6 inches from the top cushion and 32 inches from the side cushion. Object white $3\frac{3}{4}$ inches from the top cushion and 30 inches from the side cushion. Cue ball at or near the left end of the D line.

as it is when only moderate pace has to be used. If the stroke illustrated on Diagram 704 be played half a dozen times it will generally be found that the red ball's line of travel will be considerably different in some of the strokes from what it is in others, thus proving that the red ball has not always been hit in the same place. When the pace and the direction given to the red ball are both good, a scoring position will generally be left even though the cue ball may not have taken the object white at all well. With the balls placed to the measurements given under Diagram 704 care must be taken to avoid the baulk pocket and its angles. The cannon can be made quite as easily by a stroke which pots the red in the baulk pocket as by a

stroke which keeps the ball well away from the pocket, and should the red enter the pocket—or worse still catch the angles and remain in baulk—the resultant position may easily be a very bad one. Hitting the cue ball only slightly below the centre will cause it, after a fullish contact with the red, to travel to the white without much pace.

In the screw or stun gathering strokes so far illustrated in this chapter the cue ball has in every case been quite close to, or at no great distance from the first object ball. Gathering strokes are, however, quite possible by means of screw when the cue ball is a long distance from the first object ball, but such strokes are always anything but easy, firstly on account of the greater difficulty of getting very accurately on to the first object ball when playing from a distance, and secondly owing to the difficulty of gauging the exact pace at which the stroke must be played in order to cause the first object ball to come to rest close to the other object ball.

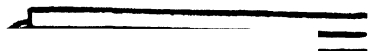
Diagram 705 illustrates a gathering stroke played from the D. A strong stroke is necessary to cause the red to travel all round the table and the cue ball must be spotted more or less as shown on the diagram—notwithstanding that this means making the screw a bigger one than from the other end of the D—as otherwise the red cannot be driven round the table to the object white. With the positions of the red ball and the object white on Diagram 705 reversed, a cannon to drive the red to the corner pocket would be a good stroke to play, and there would be little need to try and drive the object white all round the table to the red ball. With the position shown on the diagram, however, an attempt should be made by all fair players to bring the red ball up to the object white in order not to have to depend for a scoring position almost entirely upon how the cue ball catches the object white.

CHAPTER XXXIII.

CANNONS OFF DOUBLE BAULKS.

When a player is confronted with a double baulk—which may either have been left him by his opponent or may have resulted from his own play—three methods of dealing with it are open to him. He may give a safety miss, he may play to hit either the red ball or the object white, as the case may be, and in this way break up what left alone may be an easy scoring position, or he may try to score from the position himself. As the first two methods of dealing with a double baulk will be fully discussed in a chapter devoted to SAFETY PLAY, only the ways and means—or some of them—of scoring from double baulks will be considered in the present chapter.

Cannons from double baulks may be broadly divided into three classes as follow :—



1st.—Cannons by an across-the-table stroke.

2nd.—Cannons by a more or less straight up-and-down-the-table stroke.

3rd.—Cannons by a stroke off the side, top and side cushions.



Occasionally a double-baulk position may present a fairly easy stroke for any player except the merest novice, and at other times the position may be such that although a certain amount of judgment as to where the cushion should be hit and as to how much side should be used—when side is required—is necessary, it presents no great difficulty to any good player. Infinitely oftener, however, a double-baulk position presents nothing at all easy even for really good players and not seldom the position is such that a cannon is virtually impossible by any well thought out method that can be put into operation. It is true that no double-baulk position exists from which a cannon may not be made by some fearful and wonderful stroke which, played at banging pace off the side or top cushion, may cause a wild and rapturous kiss—or perhaps more than one—between the cue ball and the object ball after they have already met once, or a kiss between the object balls ; or again by some fantastic stroke which results from the cue ball catching an angle of a centre pocket on its way to baulk, or

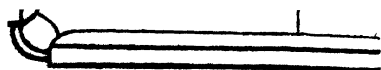


DIAGRAM 706.—A cannon off a double baulk. Red ball $8\frac{1}{2}$ inches from the side cushion and $26\frac{1}{2}$ inches from the baulk cushion. Object white 6 inches from the side cushion and $24\frac{1}{2}$ inches from the baulk cushion.

from its catching the angles of a baulk pocket, either before or after having hit one of the object balls. Cannons by strokes of the nature of those just roughly outlined cannot, of course, be considered in this chapter, but various examples of very difficult double-baulk cannons which are typical of cannons often made by the leading professionals will be given in this chapter, inasmuch as the method adopted for these cannons is based on recognised scientific lines.

Diagram 706 illustrates a cannon off a double baulk which is an easy enough stroke even for an ordinary player. All that is necessary is to strike the cushion just a shade out of baulk and to hit the cue ball with a fair amount of side.

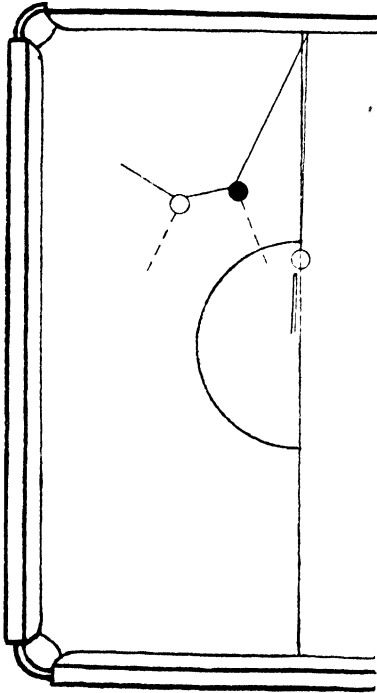
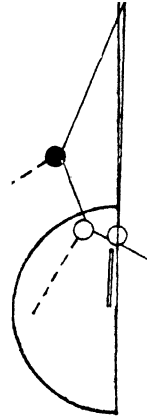


DIAGRAM 708.—A cannon off a double baulk. Red ball 17 inches from the side cushion and $22\frac{1}{4}$ inches from the baulk cushion. Object white 18 inches from the side cushion and $15\frac{3}{4}$ inches from the baulk cushion.



DIAGRAM 707.—A cannon off a double baulk. Red ball 17 inches from the side cushion and $22\frac{1}{4}$ inches from the baulk cushion. Object white $23\frac{1}{2}$ inches from the side cushion and 26 inches from the baulk cushion.

Diagram 707 illustrates a cannon off a double baulk which is a variation of the stroke shown on Diagram 706. Owing, however, to the object balls being much farther from the cushion and also from each other than on Diagram 706, this cannon is a much more difficult stroke. The amount of side which must be imparted to the cue ball has to be very nicely gauged in order that this ball may get correctly on to the red. The cue ball should be struck without much strength in order that a successful stroke may not scatter the balls.

Diagram 708 illustrates a cannon which is a variation of the one shown on Diagram 707. The red ball is situated exactly as before, but the object white is now on the other side of the red. This

cannon is rather more difficult to judge than the cannon shown on Diagram 707, not because the cue ball has to be struck with more side, but because standing at the table the place on the red ball which the cue ball must hit in order for the cannon to be made is not so easily seen as is the case when playing the stroke illustrated on Diagram 707.

Diagram 709 illustrates a cannon off a double baulk which must be played with plenty of side, in fact it requires nearly as much side as most ordinary players can impart to the cue ball. This stroke should be played without much strength, otherwise the effect of the side will be partly lost, for when a fast ball strikes a cushion at any angle except a

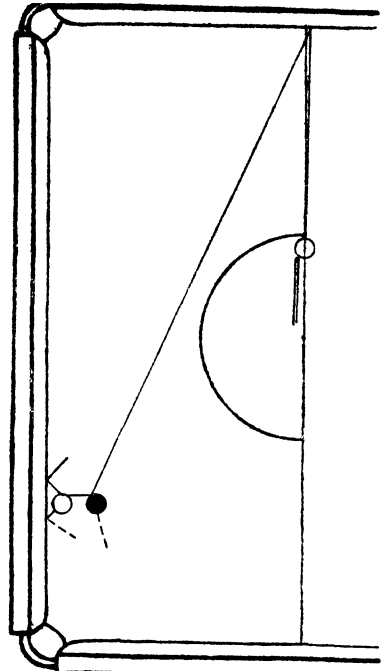


DIAGRAM 709.—A cannon off a double baulk. Object white close to the baulk cushion. Red ball an inch or two from the white. Both balls about 14 inches from the side cushion.

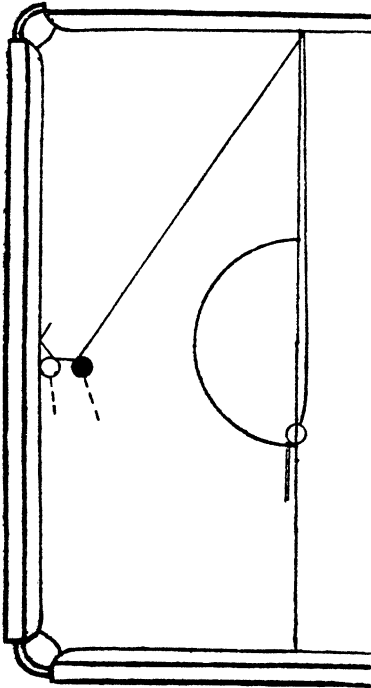


DIAGRAM 710.—A cannon off a double baulk by means of a partial-massé stroke. Object white touching the baulk cushion. Red ball an inch or two from the white. Both balls about 28 inches from the side cushion.

very acute one—and more especially when it hits it full in the face—it presses itself into it and the angle of rebound which results from this pressing in of the cushion is always considerably squarer than the rebound angle of a much slower stroke. With considerably more side than shown on the diagram the cannon could be made off the baulk cushion, the cushion being struck in front of the object white. The fact that the stroke requires a good deal of side makes it to many ordinary players less difficult than it would otherwise be, for when a player recognises that a stroke—no matter of what nature—requires as much side as he can possibly impart to the ball—and, of course, different players have different limitations—he

has not to try and gauge how much side he must use, but has simply to put on all he can.

Diagram 710 shows a double-baulk position which is similar in appearance to that illustrated on Diagram 709 except that the balls are much nearer the centre of the baulk cushion. The cannon shown here is, however, an exceedingly difficult stroke, for in order for it to be made the cue ball must be struck with very nearly the maximum amount of side that it is possible for any player to impart to it. The ball touching the baulk cushion is only slightly removed from the central line of the table, and though the line on the diagram which indicates the cue ball's path as it travels from the side cushion would, if continued, meet the baulk cushion at some considerable distance from its centre, it nevertheless requires a great amount of side to cause the ball to travel along this line. In fact, the stroke is not possible unless the butt of the cue is elevated, and thus it is really a partial *massé*. The cue ball is aimed as though to strike the side cushion a little farther out of baulk than is compulsory, but the ball—when the stroke has been well played—describes a slight curve, and by reason of this strikes the cushion just out of baulk—striking the cushion inside the line would make the stroke a foul—and the alteration from the normal angle of incidence caused by the slight curve allows of the cannon being made. On the diagram the cannon is shown off the red ball, but it is quite possible by means of this partial-

massé stroke to cannon off the white ball or even to cannon by hitting the cushion in front of the white ball. In any case the stroke is an extremely difficult one and quite beyond all except very good players. A cannon with the object balls as shown on Diagram 710 is, however, quite possible by a stroke which causes the cue ball to travel from one side cushion to the other and then on to the object balls. Such a stroke is not beyond the compass of any ordinary player, but it is a very uncertain one owing to the difficulty of gauging the amount of side which it requires.

Diagram 711 illustrates a cannon off a double-baulk position by means of an up-and-down-the-table stroke. With the balls away from the cushion, the stroke would be a very difficult one, but when the balls are quite close to it the cushion helps as a guide to the direction to be given the cue ball, and secondly, situated as they are, there is a double chance, for the cue ball may either return from the top cushion direct on to the object balls or—as shown on the diagram—the cannon may be made off the side cushion. As the cue ball can only strike the side cushion at a very acute angle, the cannon may be made even when the cushion is

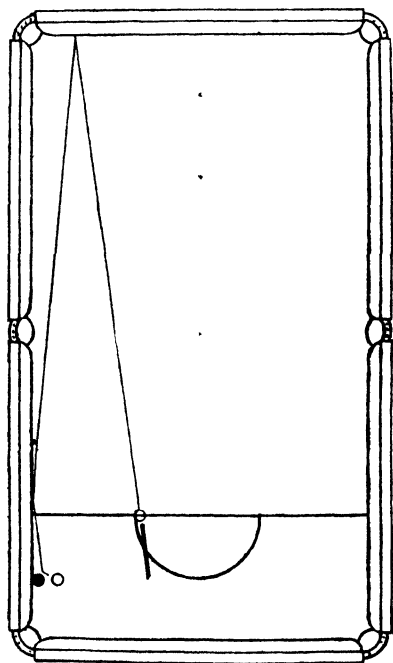


DIAGRAM 711.—A cannon off a double baulk by means of an up-and-down-the-table stroke. Red ball touching the side cushion. Object white 2 inches from the red. Both

at equidistant from the baulk line and the baulk cushion.

struck at a point still farther from the object balls than indicated on the diagram.

Diagram 712 illustrates another cannon off a double baulk by means of an up-and-down-the-table stroke. The stroke is a difficult one, for not only has the cue ball to hit the red on its way down the table, but it has to hit it somewhere about half-ball—when the cue ball travels straight on to it from the top cushion—for the cannon to be made. The cannon is, however, also possible by a stroke which causes the cue ball as it travels down the table to strike the side cushion a short distance in front of the red ball, provided that the contact with this ball is only a thin one.

Diagram 713 illustrates a variation of the cannon shown on Diagram 712. The situation of the red ball is exactly

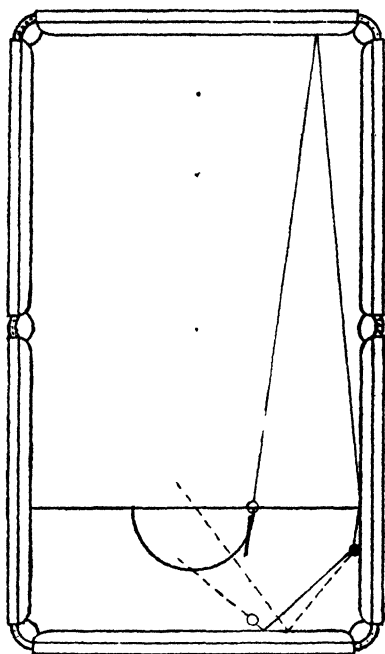


DIAGRAM 712.—A cannon off a double baulk by means of an up-and-down-the-table stroke. Red ball touching the side cushion and 7 inches from the baulk line. Object white touching the baulk cushion and about 15 inches from the side cushion.

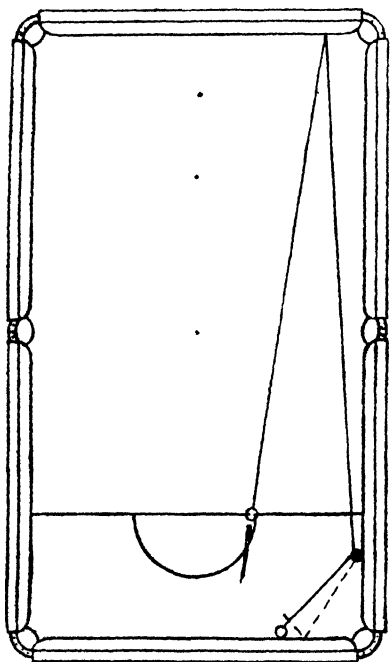


DIAGRAM 713.—A cannon off a double baulk by means of an up-and-down-the-table stroke. Red ball as on Diagram 712. Object white 1 inch from the baulk cushion and 22 inches from the side cushion.

as before, but the white ball is considerably farther from the side cushion. Here, the cannon will not be made if the cue ball travels straight from the top cushion on to the red ball no matter how it may take the ball. Should the cue ball, however, strike the side cushion just in front of the red ball the cannon will be made provided the contact is about half-ball or at least not much fuller nor much thinner than half-ball. Should the cue ball, however, get very full on to the object ball or else quite thin on to it after hitting the cushion in front of it the cannon will fail, for the cue ball will strike the baulk cushion some distance from the second object ball, that is to say at some spot between this ball and the pocket.

The strokes illustrated on Diagrams 711, 712, and 713 should not be played

with very high pace, for, except when the cushion is struck at a very acute angle, high pace causes the angle of reflection to be very different from the angle of incidence—especially in this the case when the cushions are very resilient. In the strokes shown on Diagrams 711, 712, and 713 high pace would cause the cue ball to rebound from the top cushion much more squarely than indicated by the continuous line on these diagrams.

Diagram 714 illustrates the simplest kind of all-round-the-table cannon off a double baulk. With both the object balls close to a baulk pocket there is always a very fair likelihood of the cannon coming off when played by an all-round-the-table stroke by reason of the many ways by which it may be made. The cue ball after striking the side, top and side cushions may travel direct on to the object balls, or the cannon may possibly be made off the baulk cushion—as illustrated on the diagram—or off the baulk-side cushion, or even—with a slight variation of the position shown on the diagram—off the baulk and baulk-side cushions or off the baulk-side and baulk cushions, to say nothing of the possibility of the stroke being made off one or both of the angles of the baulk pocket. There are many different ways by which the cue ball may be made to travel round the table to the vicinity of the baulk pocket, for the stroke can be successfully played from totally different parts of the D, provided that aim is taken at correspondingly different points on the side cushion. Again, two strokes played from the same spotting in the D, but having a very different line of aim to the side cushion, may both be successful, not only by reason of the several different ways by which the cannon may be made when the cue ball travels to the vicinity of the baulk pocket, but also because of the varying angles at which the cue ball may rebound from the cushions—especially from the first two cushions—according to whether it is made to travel with medium to fast pace or with very high pace, with little or no side or with plenty of side, or with plenty of top or with strong reverse rotation.

In the chapter on *POTTING THE RED BALL*, Diagrams 416, 417 and 418 illustrated three of the many different all-round strokes from the D by which a ball on the brink of a baulk pocket could be potted, and these three strokes are just as applicable to a cannon when the balls are near the baulk pocket as to a pot when a ball is over the pocket, in fact, the cannon is much the easier of the two shots.

Cannons off double baulks by all-round-the-table strokes often vary greatly from one table to another, so much so that a stroke which is successful on one table may on another table with a different make of cushions be quite a failure.

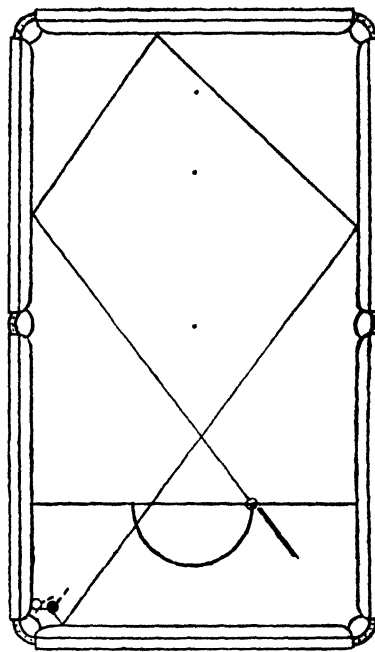


DIAGRAM 714.—A cannon off a double baulk by means of an all-round-the-table stroke. Object balls close to one another and quite near the corner pocket.

even though the spotting in the D and the point on the side cushion struck by the cue ball may be identical in both cases and notwithstanding that in both instances exactly the same amount of side and pace may be imparted to the cue ball. This being so, a cannon off a double baulk is always a far more uncertain stroke on a strange table than on a table with which a player is very familiar, and though this applies to positions similar to that illustrated on Diagram 714 it applies with still greater force to positions wherein the object balls are not in the vicinity of the baulk pocket.

With the object balls close to the baulk pocket, as shown on Diagram 714, the usual way of playing the cannon is to place the ball at the end of the D line and to play a fairly fast stroke with a moderate amount of running side, aiming to

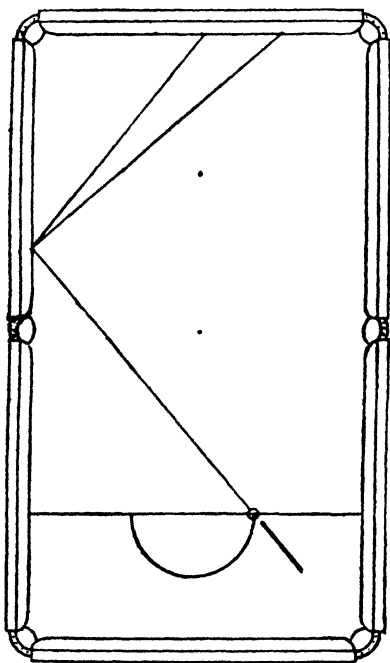


DIAGRAM 715.—An illustration of the different effect which in extreme cases high hitting and low hitting of the cue ball in combination with high speed may have on the angle of rebound. The line which meets the top cushion right behind the spot indicates the angle of rebound which results from a high-speed stroke played with plenty of top and the line which meets the top cushion a long way to the right of the spot indicates the angle of rebound which results from a high-speed stroke played with plenty of bottom. In both cases the line of aim to the side cushion is from the extreme end of the D line to the point on the cushion which is in an exact line with this end of the D line and the centre of the baulk pocket.

hit the side cushion either at a point which is exactly in a line with the spot on the D line on which the cue ball is placed and the centre of the baulk pocket over which the cue moves backwards and forwards previous to its striking the ball, or else at a point an inch or two or even a few inches higher up the cushion than this. When the cushions are not very yielding the cue when striking the ball should as a rule be in alignment with a line drawn from the end of the D line to the centre of the baulk pocket, but when the cushions are very resilient the cue ball should take the side cushion several inches higher up. In the stroke illustrated on Diagram 714 the cue ball takes the side cushion some inches above the point on this cushion which is in a line with the right end spot of the D and the centre of the baulk pocket.

Reference has already been made to the variation in the angle of rebound which may be caused by side, strength, top, or bottom, and though all players are aware that the angles of rebound in all-round-the-table strokes must vary with variations in the amount of side imparted to the cue ball, and most players that strength affects the angle of rebound from a cushion, few players have any idea to what extent top or bottom on the cue ball—especially when combined with high pace—affects the angle of rebound from a cushion.

Diagram 715 illustrates an extreme case of different angles of rebound re-

pace and without any side, but plenty of top in one case and with plenty

of bottom in the other. If on a table with very resilient cushions the cue ball is spotted at the right extremity of the D line and aim is taken at a point on the side cushion which is exactly in a line with the end of the D line and the centre of the right baulk pocket, a top-speed stroke played with plenty of top and without any side will cause the cue ball to strike the top cushion immediately behind the spot, and in extreme cases even to the left of this point, whereas with plenty of bottom instead of top the same stroke, as regards direction and pace, will cause the ball to strike the top cushion at a point quite 15 inches, and in extreme cases even 18 inches, to the right of the point on the cushion immediately behind the spot. Of course, as already stated, Diagram 715 illustrates an extreme case of how top or

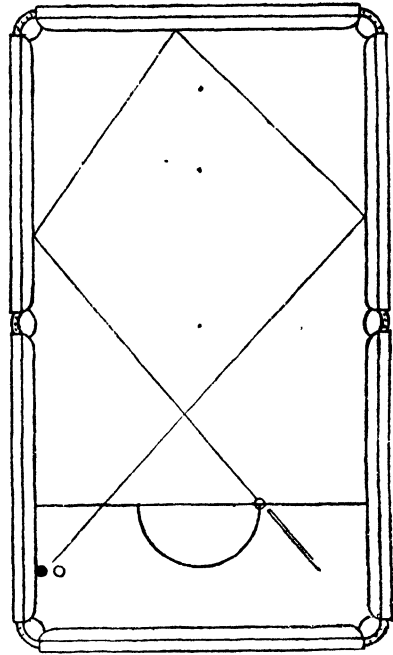
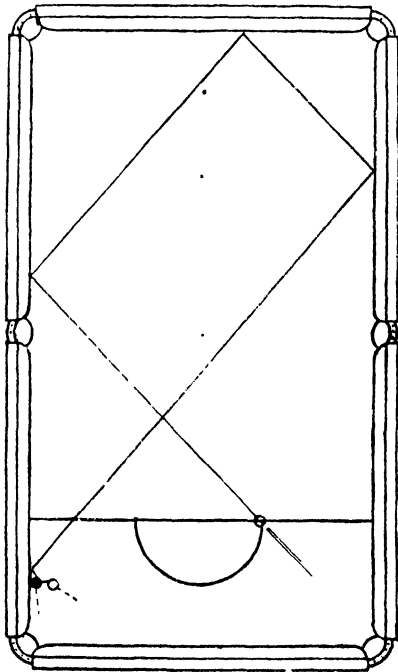


DIAGRAM 716.—A cannon off a double baulk by means of an all-round-the-table stroke. Red ball touching the side cushion. Object white 2 inches from the red. Both balls about equidistant from the baulk line and the baulk cushion. Alternative strokes are illustrated on Diagram 717 and 718.



stroke by means of an all-round-the-table stroke. Object balls situated as on Diagram 716.

bottom may affect the angle of rebound, but whenever the cue ball is aimed at a cushion with any speed the angle of rebound is affected to a greater or less extent by top or drag on the ball. In playing all-round cannons from the D with both object balls in baulk the cue ball should, therefore, never be struck very high up nor low down.

Diagram 716 shows the object balls close together and about half-way between the baulk cushion and the baulk line. Playing from the D a cannon is possible by various kinds of all-round strokes as well as by an up-and-down-the-table stroke. When the

all-round stroke is perhaps the one illustrated on the diagram. Here, the cue

ball is spotted at the extreme end of the D line and is aimed at the spot on the side cushion which is in a direct line with the centre of the baulk pocket and the end spot of the D line. A fair amount of running side is required for the stroke—which should be a pretty fast one—and the cue ball should be struck about half-way up. On many tables a stroke played in the manner described will cause the cue ball to travel quite close to the baulk pocket or even to enter it.

Diagram 717 illustrates another way of playing the all-round cannon with the object balls in exactly the same position as on Diagram 716. As before, the cue ball is spotted at the extreme end of the D line, but instead of aiming at that part of the side cushion which is

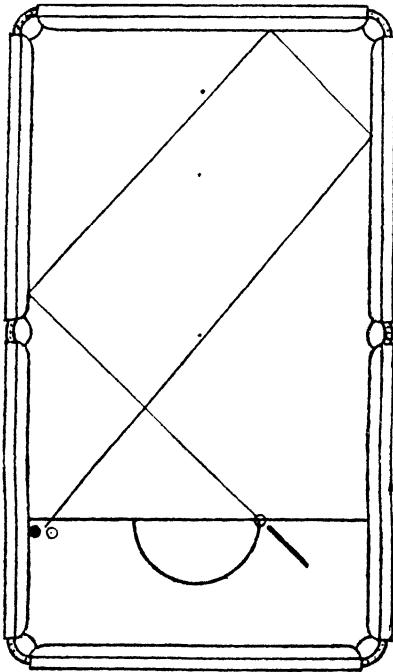


DIAGRAM 719.—A cannon off a double baulk by means of an all-round-the-table stroke. Red ball touching the side cushion. Object white about 2 inches from the red. Both balls 2 inches from the baulk line. Alternative strokes are shown on Diagrams 720 and 729.

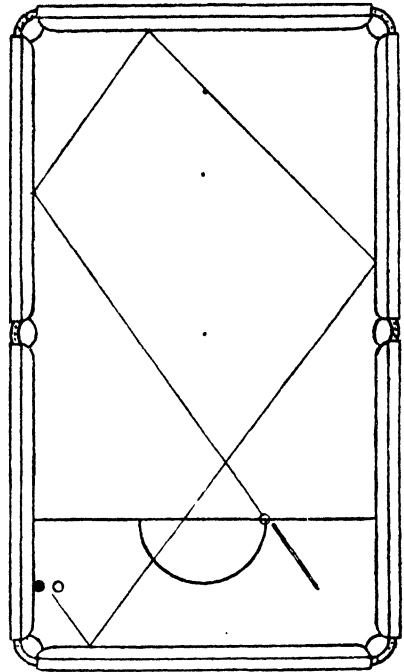


DIAGRAM 718.—A cannon off a double baulk by means of an all-round-the-table stroke. A variation of the stroke illustrated on Diagram 716. Object balls situated as on Diagram 716.

exactly in a line with the centre of the baulk pocket and the end spot of the D line, aim is taken to hit the side cushion six or eight inches nearer the centre pocket, and instead of the stroke being played with plenty of running side it is played without any side or at most with just a trace of running side. This stroke is, however, hardly as sound as the one shown on Diagram 716.

Diagram 718 shows the object balls in exactly the same position as on Diagrams 716 and 717, and illustrates a third method of playing the cannon on a table with resilient cushions. The cue ball is spotted as before, but the side cushion is taken considerably higher up—just a few inches lower down than the pyramid spot. Taking the side cushion higher up causes the opposite side cushion to be taken lower down, with

the result that the cue ball strikes the baulk cushion some distance from the pocket, and the cannon may be made either direct on to the object balls or off the baulk-side cushion. Running side is required for this cannon. This stroke would also serve for a cannon with the object balls close to the point on the baulk cushion which is met by the continuous line on Diagram 718.

Diagram 719 shows the object balls close together and about two inches from the baulk line and the all-round cannon can be made by playing from the far end of the D line and taking the side cushion about an inch or so above the upper angle of the centre pocket, as shown on the diagram. When, however, the cannon is played in this manner no side should be used—or at most only just a very slight amount of running side in order to prevent the unintentional use of check side—and the stroke should be played without much strength. If high speed be used on a table with very resilient cushions the altered angles of rebound due to the cue ball pressing itself into the cushion will cause the baulk-side cushion to be taken quite a long way above the object balls. When the stroke is played without much strength the cue ball may travel direct on to the object balls or the cushion may be struck just in front of the balls before the cannon is made. There is thus a moderate amount of latitude as to the direction in which the cue ball must travel for the cannon to be made.

Diagram 720 shows the object balls in exactly the same position as on

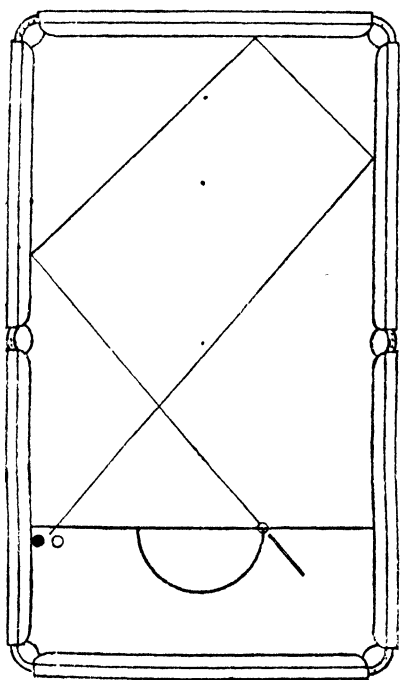


DIAGRAM 720—A cannon off a double baulk by means of an all-round-the-table stroke. An alternative stroke to the one illustrated on Diagram 719. Object balls situated as on Diagram 719.

Diagram 719, but illustrates a different method of playing the all-round cannon. As before, the cue ball is spotted at the extreme end of the D line, but instead of using a plain-ball stroke without much pace and taking the side cushion just an inch or two above the upper angle of the centre pocket, aim is taken at the point on the side cushion which is in a line with the centre of the baulk pocket and the end spot of the D line, and the stroke is played with plenty of pace and running side, the ball being hit about half way up. The cue ball's line of travel resulting from such a stroke will vary on different tables if the cushions are different, but the cannon shown on Diagram 720 is by no means a difficult stroke on a table with fast resilient cushions when played in the manner just described, and is perhaps a sounder stroke than the cannon from the same position illustrated on Diagram 719.

In the examples already given of cannons from a double baulk by means of an all-round-the-table stroke the balls have been close together and also close to the side cushion, and although such cannons are never certainties they are far easier of accomplishment than cannons from double baulks with one or both balls a long distance from the side of the table.

When, therefore, a good player succeeds in making a cannon off a double baulk—with one or both balls well away from the side cushion—by means of an all-round-the-table stroke he fully deserves the applause with which such a stroke is invariably received by spectators, for cannons of this nature, even when quite on, must necessarily always be most difficult and uncertain strokes, and only those players who have a very good knowledge of angles are at all likely to bring off such highly scientific strokes in the course of a game.

Many of the most beautiful cannons off double baulks, with one or both object balls right away from the side cushions, which are brought off by professionals and first-class amateurs have as their basis the stroke shown on Diagram 721, wherein the cue ball, played from the extreme end of the D line, after striking the side, top and side cushions, is shown taking the baulk cushion exactly at its centre. It is quite possible to find the centre of the baulk cushion on any table, but as already explained, different cushions often give very different results, and consequently the method of playing this stroke is not quite the same on different tables. The stroke illustrated on Diagram 721 shows how the baulk cushion may be taken at its centre when the table on which it is played has fast resilient cushions. Aim should be taken at a point on the side cushion an inch or two lower down the table than the spot, and the cue ball must be struck with plenty of running side. No player can make the cue ball strike the centre of the baulk cushion every time he tries the stroke, for slight variations in the point of contact with the first cushion, in the amount of side imparted to the ball, and in the pace at which the stroke is played affect the result in a greater or less degree, and thus the ball will sometimes strike the baulk cushion a little to the right and sometimes a little to the left of its centre. When, however, the stroke is played in the manner described, the ball will always strike the baulk cushion near its centre and often practically at its exact centre. Extreme side tends to cause the ball to strike the baulk cushion to the left of its centre, because the more side the ball is carrying at the moment that it strikes the top cushion the nearer to the centre pocket will the baulk-side cushion be struck. When, on the other hand, the stroke is played with too little side the baulk-side cushion will be struck farther from the centre pocket than shown on Diagram 721, and consequently the baulk cushion will be struck to the right of its centre. Hitting the side cushion an inch or so higher up than on the diagram causes the baulk-side cushion to be taken farther from the centre pocket than

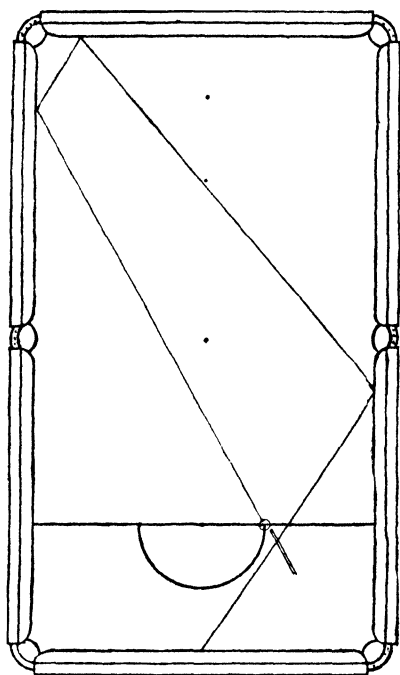


DIAGRAM 721.—A stroke by which the cue ball may be made to strike the baulk cushion at its centre. The cue ball is spotted at the extreme end of the D line and aim is taken at a point on the side cushion an inch or two lower down the table than the spot. Plenty of running side is required.

shown on the diagram, and inversely, hitting the side cushion an inch or so lower down than on the diagram causes the baulk-side cushion to be taken nearer the centre pocket, the strength of the stroke and the amount of side imparted to the ball being supposed to be the same in both cases. Thus by slightly altering the line of aim to the first cushion or by playing with a little more or a little less side it is possible to find the centre of the baulk cushion should the first attempts be unsuccessful.

Diagram 722 illustrates a cannon made by the stroke shown on Diagram 721. The object white is just a little to the left of the centre of the baulk cushion and the cue ball by taking this

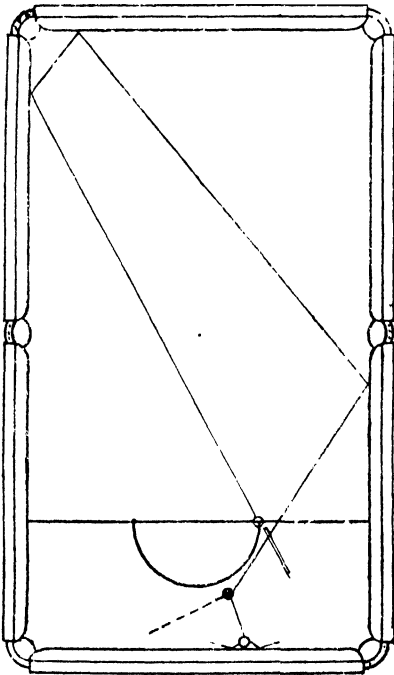


DIAGRAM 723.—A cannon off a double baulk by means of an all-round-the-table stroke. Red ball 12 inches from the baulk cushion and 28 inches from the side cushion. Object white close to or touching the baulk cushion and about 25 inches from the side cushion.

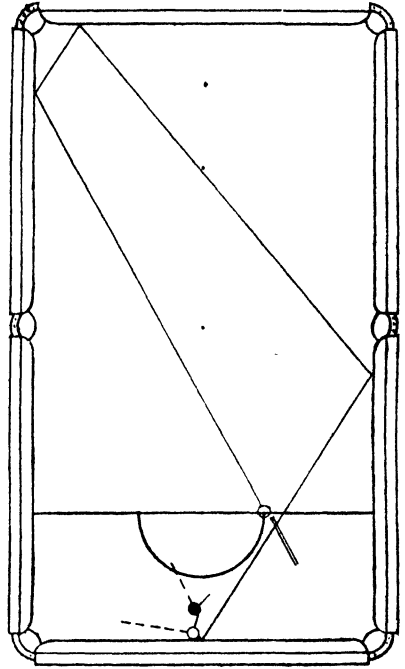


DIAGRAM 722.—A cannon off a double baulk by means of an all-round-the-table stroke. Object white touching or nearly touching the baulk cushion. Red ball 3 inches from the white. Both balls 1 inch to the left of the central line of the table. The centre of each ball is thus a shade over 2 inches from the central line of the table.

cushion at its centre hits the white as it rebounds from the cushion and then travels to the red.

Diagram 723 illustrates another beautiful cannon which is possible by exactly the same stroke which is required for the cannon illustrated on Diagram 722. The line which denotes the path of the cue ball would if continued from the baulk-side cushion to the baulk cushion meet the baulk cushion at its centre, but as the red ball lies partly in its path this ball is taken somewhere about half-ball and this allows of the cannon being made.

Diagram 724 illustrates a very beautiful cannon off a double baulk which is but a slight variation of the stroke

shown on Diagram 723. Here, again, the line which denotes the cue ball's path is making straight for the centre of the baulk cushion after having left the baulk-side cushion. The cue ball, however, travelling along this line finds the way to the baulk cushion blocked by the object white, about half of which lies right in its way so that something like a half-ball contact takes place, and this allows of a cannon being made off the baulk cushion.

Diagram 725 still further illustrates the principle of cannoning off a double baulk by means of a stroke which causes the cue ball, after striking the side, top and side cushions, to take the baulk cushion at its centre. As before, the

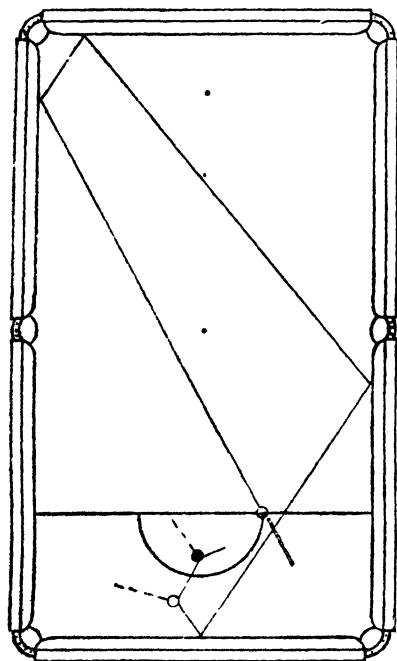


DIAGRAM 725. - A cannon off a double baulk by means of an all-round-the-table stroke. Red ball $18\frac{1}{2}$ inches from the baulk cushion and 33 inches from the left side cushion. Object white 9 inches from the baulk cushion and $28\frac{1}{2}$ inches from the side cushion.

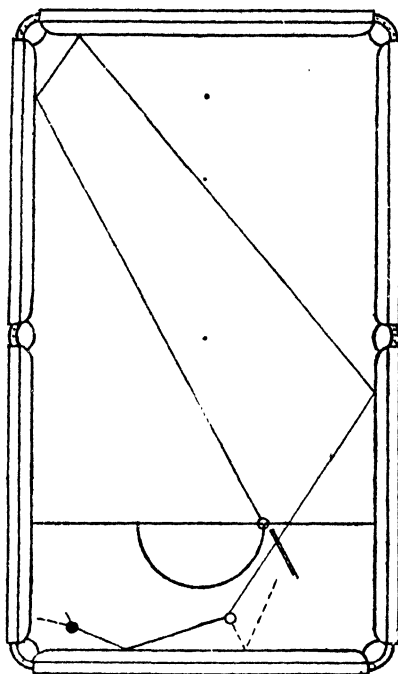


DIAGRAM 724. - A cannon off a double baulk by means of an all-round-the-table stroke. Red ball $3\frac{1}{2}$ inches from the baulk cushion and $6\frac{1}{2}$ inches from the side cushion. Object white $5\frac{3}{4}$ inches from the baulk cushion and $27\frac{3}{4}$ inches from the side cushion.

cue ball is spotted at the extreme end of the D line and aim is taken at a point on the side cushion an inch or two lower down the table than the spot, and the stroke is played with plenty of side. With the object balls to the measurements given under the diagram the cannon will be made if the cue ball hits the baulk cushion at its centre, but even if the point of contact is a slight distance from the centre there is still a possibility of the cannon coming off.

Diagram 726 illustrates an exceedingly beautiful cannon which is really only a very slight variation of the cannon shown on Diagram 725. The object white, which is the ball first struck by the cue ball, is in exactly the

same position on both diagrams, but the cue ball after rebounding from the baulk cushion does not catch it in the same way in both strokes. In the stroke shown on Diagram 725 the cue ball, as the result of its taking the baulk cushion at its centre, catches the white ball about half-ball to the right, but in the stroke illustrated on Diagram 726 the object white is taken about half-ball to the left as the result of the cue ball striking the baulk cushion a little to the left of its centre. As already explained, other things being the same, variations in the amount of side will cause the cue ball to strike the baulk cushion at varying points near its centre, and although plenty of side must be used to cause the cue ball to strike the centre of the cushion, a little more side than is necessary for the cannon

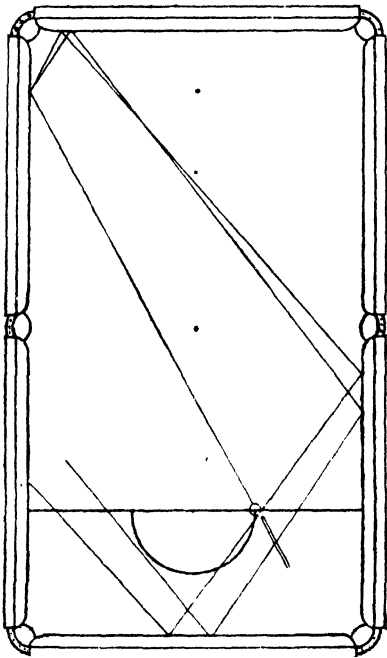


DIAGRAM 727.—An illustration of the manner in which the cue ball may strike the baulk cushion a few inches to the right or the left of its centre when playing to take this cushion at its centre.

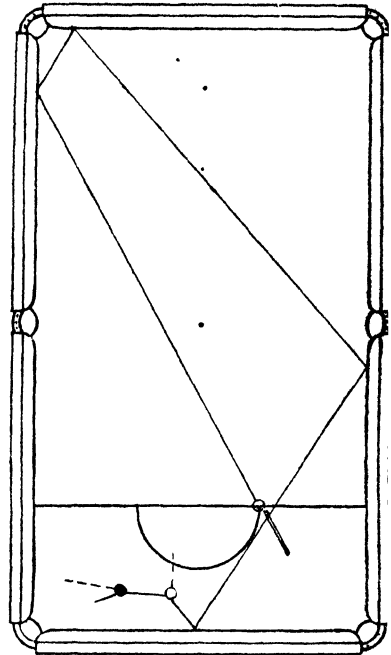


DIAGRAM 726.—A cannon off a double baulk by means of an all-round-the-table stroke. Red ball $10\frac{1}{4}$ inches from the baulk cushion and 17 inches from the side cushion. Object white 9 inches from the baulk cushion and $28\frac{1}{4}$ inches from the side cushion.

shown on Diagram 725 will cause the cue ball to strike the baulk cushion to the left of its centre and thus cause the cannon illustrated on Diagram 726 to become quite a possible stroke.

As already stated, all cannons off double baulks with one or both object balls well away from the side cushions must necessarily always be very uncertain strokes, even at the hands of the very best players, nevertheless as soon as a player thoroughly understands the principles which govern these strokes a chance of scoring always exists. The examples given on Diagrams 722 to 726 are all dependent upon one fundamental principle, viz., the cue ball leaving the baulk-side cushion with a line of travel which takes it—or would take it if no object ball

intercepted it—either to the centre or close to the centre of the baulk cushion. By modifying the method of play other parts of the baulk cushion can be struck by the object ball, and of course the stroke can be played from either end of the D or from any part of the D line, and either off the left top cushion or off the right top cushion, and there is no portion of the baulk enclosure into which the cue ball cannot enter by means of an all-round stroke. Indeed, a large part of baulk may be attacked by one stroke alone, owing to the different results which may easily arise from the impossibility of always playing two strokes in identically the same manner.

Diagram 727 shows the different lines of travel which may result from two attempts to cause the cue ball to strike the baulk cushion at its centre. The top-side cushion has been struck at exactly the same spot in both cases, but in one case—through not quite enough side having been imparted to the ball—the line of the cue ball's path meets the baulk cushion a few inches to the right of its centre, and in the other case—through the application of too much side—the line of travel impinges on the baulk cushion a few inches to the left of its centre. In both cases the attempt to reach the centre of the cushion has been a good one, yet the area contained between the two lines of travel is a considerable one.

Diagram 728 shows on a larger scale the area of the baulk enclosure which is contained between the two lines of travel shown on Diagram 727. The lines are shown both entering and leaving baulk and the cue ball is shown at intervals along these two lines. The red ball is also shown in various positions and a cue ball travelling along the lines which enter and leave the baulk enclosure would hit the red ball in its different locations. Thus without the cue ball travelling outside the shaded portion of the baulk enclosure which is embraced by the lines which enter and leave baulk, an object ball lying anywhere within the V-shaped figure on the diagram may be hit by the cue ball.

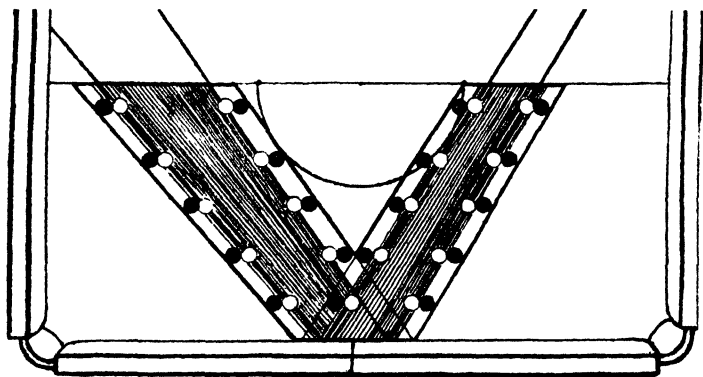


DIAGRAM 728.—The lines by which the cue ball on Diagram 727 enters and passes through baulk are here reproduced and the cue ball is also shown at various points on these lines. The shaded part denotes the area embraced by balls travelling along these lines. An object ball in any of the positions occupied by a red ball on the diagram would be hit by a cue ball travelling on one or other of the lines to which reference has already been made. The centre of the cushion is shown by the line drawn across it.

Diagram 729 shows the object balls situated exactly as on Diagrams 719 and 720, but illustrates a cannon by a very different kind of

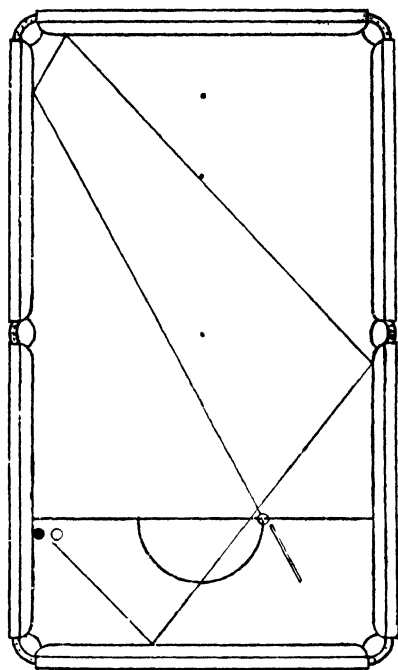


DIAGRAM 729.—A cannon off a double baulk by an all-round-the-table stroke played with extreme side. Red ball touching the cushion. Object white about 2 inches from the red. Both balls 2 inches from the baulk line. Alternative strokes are illustrated on Diagrams 719 and 720.

stroke. As already stated, when playing to make the cue ball strike the baulk cushion at its centre by means of a stroke which causes the ball to strike the top-side cushion a little lower down the table than the spot and then the baulk-side cushion at a point not far from the centre pocket, the use of too much side will result in the cue ball striking the baulk cushion to the left of its centre—when playing from the right extremity of the D line. With extreme side the cue ball may be made to strike the baulk-side cushion only just below the angle of the centre pocket and when this cushion is struck so near the pocket the baulk cushion will be taken a considerable distance from its centre—as shown on the diagram—and the cannon may be made as illustrated. The baulk cushion need not, however, necessarily be taken as far from its centre as shown on the diagram in order for the cannon to be made. Often in playing this stroke—which on a table with fast resilient cushions is not a difficult one—the cannon will be made although the cue ball may have struck the baulk-side cushion considerably farther from the centre pocket and the baulk cushion considerably nearer its centre than indicated on Diagram 729.

CHAPTER XXXIV.

NURSERY CANNONS AND CLOSE CANNONS.

Watching a clever professional make a long series of nursery cannons not only fills us with delight, but also makes many of us eager to cultivate the same method of play. So much so is this the case that many ordinary players who have never made a 50 break, and to whom even 40 breaks are very rare indeed, often practise nursery cannons when their time might be far more profitably spent in the study and practice of strokes which they constantly have to play in the course of an evening at the table. Nearly twenty years ago, when my record break was less than 30, I used to practise nursery cannons most assiduously, and in time was able to make 40 or 50 consecutive cannons and occasionally even more—the push stroke was allowed in those days. One day, however, after I had made a long string of these cannons, the marker of the room, who knew my ordinary play very well, exclaimed, “They’re no use to you, for you can’t get the position.” I felt so keenly the truth of his remark that it was many a long year before I again took up the practice of nursery cannons.

With the abolition of the push stroke in 1898, nursery-cannon play became much more difficult, and there is certainly far greater merit in a break of 20 close cannons along a cushion made under present-day rules than in a break of 50 or 60 cannons made with the assistance of numerous push strokes. Not only this, but the abolition of the push stroke has intensified the difficulty of getting perfect position for a series of nursery cannons. A very good stroke may have been played and all three balls may be bunched together close to the cushion, but notwithstanding this, the actual position resulting from the gathering stroke will very seldom indeed be quite an ideal one for nursery cannons.

There are two ideal positions—presently to be described—and only by the merest chance can a stroke which brings the balls together set up either of these positions. When as the result of a very well played stroke the balls are bunched together the resultant position may approach pretty closely to one or other of the ideal nursery-cannon positions, and clever players are then able to work the balls into the best possible position. Indeed, most of our leading professionals can in a few strokes obtain ideal position from almost any bunching of the balls near a cushion, provided, of course, that the cue ball does not lie between the object balls. When the push stroke was allowed, not only was it far easier to make big breaks of close cannons, once the balls had been worked into good position, but it was infinitely less difficult to work the balls into proper position from any bunching of them which resulted from a gathering stroke. Under the present-day rules, even when a fairly good amateur bunches the balls together as the result of a well-played stroke—or as often is the case, by chance rather than by design—he is, as a rule, quite unable to work the balls into perfect position, and although he may make a few close cannons he very quickly ends, either by getting a cover or by separating the balls. It is ever so much more difficult to work the balls into ideal position for close cannons than to maintain such a position when once it is gained, and how difficult it is for all except very expert players to make a large number of cannons, even from ideal positions, can be very easily ascertained by placing the balls by hand as desired and then playing cannons until the position is lost. Comparatively few

amateurs can, as a regular thing, make more than a dozen close cannons from a position set up by themselves, and few ordinary players can make even half this number.

Practically all professionals of eminence are able to get the balls into position for nursery-cannon play, but although with the balls well situated for this most fascinating method of play, a long run of cannons is not beyond any of our leading professionals, only Cook, Reece, Bateman, Stevenson, Williams, and

Lovejoy have in recent years cultivated this branch of the game to any extent. Two dangers are ever present when playing close cannons, viz., a cover, or the cue ball remaining in contact with the second object ball. With untrue balls it is quite impossible for any player to make a long run of close cannons, and when the balls are very bad—which is too often the case in public rooms where ivory balls are in use—so much wobbling and falling over or away takes place in these delicate little cannons that the cue ball will very soon remain in contact with one of the object balls, or else a cover will take place if any attempt is made to keep the balls in position for a sequence of close cannons. It is also essential for a long run of nursery cannons that the cloth should be in good condition. On old and worn-out cloths a true set of balls will wobble so much that even the greatest skill cannot prevail against such a handicap. Professionals, it is true, play all their important games on tables which are in the best of condition, and consequently have not to contend with the difficulties which arise from a worn-out cloth, and in addition to this the balls with which they play are almost always very reliable. Notwithstanding all this, some of our greatest players have either left nursery cannons severely alone or have been content with short runs, preferring to break up the position very quickly and thus avoid the risks which are inseparable from close-cannon play. Great players like Roberts and Dawson never made big runs of nursery cannons after the abolition of the push stroke.

Not only is it now far more difficult

the days of the push stroke, but it is

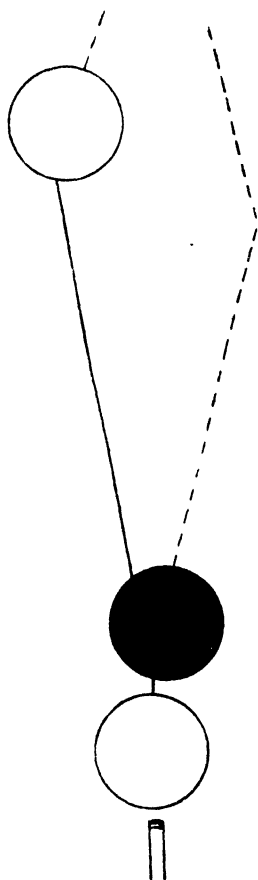


DIAGRAM 730.—A cannon by a push stroke. The balls can be bunched together by means of a gentle stroke. Under present-day rules the position is a very awkward one. Cue ball $1\frac{1}{2}$ inches from the cushion and $\frac{1}{4}$ inch from the red. Red ball $1\frac{1}{2}$ inches from the cushion. Object white $3\frac{1}{4}$ inches from the cushion and 8 or 9 inches from the red. The interrupted line shows

the red ball's path over which the centre of the ball travels.

also much more difficult to get the balls together under present conditions than it used to be when the push stroke was allowed.

Take, for example, the position shown on Diagram 730. Here, a cannon can be made quite easily by means of a push, and by playing such a stroke very gently it is not at all difficult to bunch the balls. With a push a foul stroke, the position is, however, a very awkward one, and unless a player is extremely capable at the *massé* stroke the probability of any score is exceedingly remote.

Diagram 731 shows a placing of the balls which is typical of positions which constantly occur at the top of the table. With the balls to the measurements given under the diagram it is quite possible by means of a cannon of very exact strength to bunch the balls together for nursery-cannon play. A player must, however, be possessed of exceptional ability to be able to play this cannon with the exactness of contact with *both* object balls and the nicety of strength which is necessary to bunch the balls in good position for a run of close cannons. In the position shown on Diagram 731 a cannon is only a perfect stroke—judged by the very high standard of what is necessary to get nursery-cannon position—when the cue ball gets quite full on to the second object ball, and when in addition to this the direction and pace given to the first object ball are such as to cause it to return from the side cushion and gently hit the cue ball—which has come to rest right in front of the second object ball—full in the face, or at least if not quite full in the face, on the side which is near the other ball. By causing the cue ball to cannon quite full on to the second object ball this ball will be held against the cushion and prevented from getting away, and provided that the cue ball has travelled from one object ball to the other without much speed it will remain close to the second object ball. If the first object ball has been given perfect direction it will rebound from the side cushion on to the cue ball more or less as shown on Diagram 732, and in this way the two object balls will be left quite close together and the cue ball will be only a short distance away.

As already stated, only an exceedingly good player is likely to get perfect nursery-cannon position as a result of a cannon played from the position shown on Diagram 731. Even when the stroke is played with such good strength that

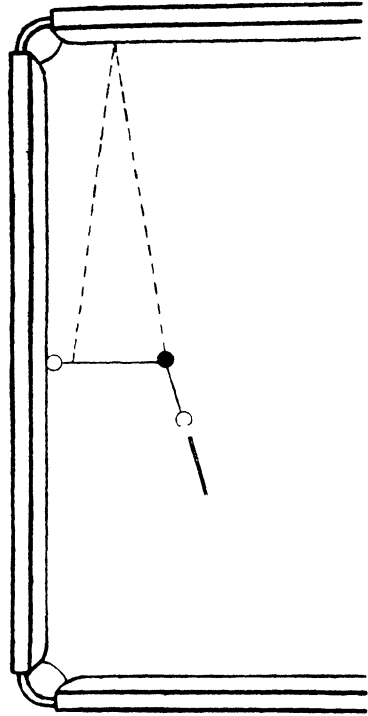


DIAGRAM 731.—A cannon by which the balls may be bunched together for nursery-cannon play. Red ball on the spot. Object white touching the cushion and right behind the red. Cue ball $13\frac{3}{4}$ inches from the top cushion and 27 inches from the side cushion. The cue ball should cannon quite full on to the object white and the red ball should return from the side cushion and gently hit the cue ball which has come to rest near the object white.

all the balls are left together, the resultant position need not necessarily be a favourable one for a series of close cannons, and it may easily be far removed from an ideal nursery-cannon position. In fact, when the strength has been accurate but the direction given to the first object ball has not been good the resultant position may be very indifferent, for the cue ball may be between the object balls. Worse still, incorrect contact with the first object ball may result in a cover, especially should the cue ball not get quite full on to the second object ball by reason of the stroke having been slightly over-screwed.

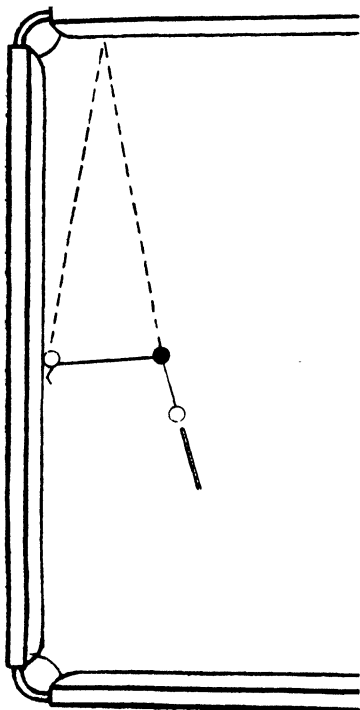


DIAGRAM 733.—An example of the cover that may arise when playing to bring the balls together for nursery-cannon play. The red ball has not been given perfect direction and the cue ball has not taken the object white sufficiently full. Position of all three balls before playing the cannon exactly as on Diagram 731.

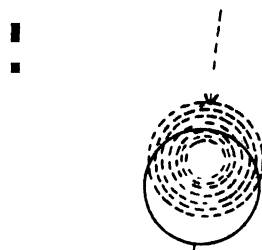


DIAGRAM 732.—The manner in which the cannon illustrated on Diagram 731 may leave nursery-cannon position. The arrow indicates the direction in which the red ball has travelled from the side cushion and the concentric intersected circles indicate a possible resting place for the red after it has knocked the cue ball away. The cue ball's final resting place is indicated by the intersected circle. The object white is shown touching the cushion.

Diagram 733 illustrates the manner in which a cover may occur when playing to bring the balls into position for nursery cannons. The intersected line drawn from the red indicates the incorrect direction imparted to this ball—by reason of the cue ball having taken it a shade too full—and shows how it may come to rest close to the cushion and behind the other ball. The continuous line drawn from the red to the white indicates the manner in which the cue ball—by reason of its not having got quite full on to the object white—may also come to rest close to the cushion. With all three balls in a line, or nearly in a line, the position may be virtually safe to all players who are unable to play difficult *massé* strokes.

With the balls to the measurements given under Diagram 731 the position

is, of course, a top-of-the-table one, and the red could be potted in such a manner as to leave the cue ball well situated for a cannon. Such a stroke would, however, have to be very well handled in order to get *correct* position for the cannon. With the positions of the object balls reversed—that is to say, with the object white on the spot and the red ball close to the cushion and right behind the spot—the only stroke to play would be the gathering stroke illustrated on Diagram 731.

It is quite impossible to give anything like a full and complete description of the different strokes which a skilled manipulator may make use of in a long series of nursery cannons. Firstly, because the variety of strokes made use of by good players is so large, and secondly, because in most cases it is not possible to give measurements sufficiently close to set up exact positions. In very many cases a difference of so little as one thirty-second of an inch or even considerably less in the position of any one of the balls may quite alter the stroke to be played.

Many players who have watched Reece or Stevenson make a long run of close cannons along the top cushion or down the right top-side cushion, whilst marvelling at the speed at which these famous professionals play these strokes, have no doubt come to the conclusion that a very long run of nursery cannons is but a constant repetition of a very few different strokes. It is, however, not too much to say that a run of 40 or 50 cannons along a cushion may contain hardly two strokes which are quite alike. Many may be very similar, but will differ from one another in some little detail which the ordinary player cannot detect or grasp. All nursery cannons are delicate and gentle strokes, but even in a series of most delicate strokes there will be very considerable variations in the strength used. For example, in one stroke the cue ball may travel say two inches, and in another only one inch. Both are naturally very gentle strokes, yet—providing the same kind of contact has been made with both balls in each case—one stroke has been played with just twice as much strength as the other. Sometimes in order to retain good position the cue ball must travel on to the second object ball with very little more speed than is necessary to reach it. At other times the retention of position demands that the cue ball shall travel some little distance after touching the second ball. In fact, in some positions the cue ball, after thinly hitting both object balls and then travelling to the cushion, must rebound a considerable distance in order to be in proper position for the next stroke. Again, the kind of contact which the cue ball has to make with the object balls constantly varies during a succession of close cannons along a cushion. Sometimes both object balls have to be taken exceedingly fine—especially does this apply to the first object ball, which perhaps should be only just grazed; at other times although the contact with both balls has to be a very thin one, it has not to be of that excessive thinness which may be termed the end of the scale of thin strokes. Or the first object ball may have to be taken very thinly in order that the cue ball may get pretty full or even very full on to the second object ball. Further, in order to retain position it may be necessary to move the second object ball lying close to the cushion a considerable distance whilst barely moving the first object ball, or the first ball may have to be moved more than the second ball. Finally, the stroke may have to be played with running side, check side, or without side, according to the position, and even screw may have to be used in order to retain position. Inasmuch as variations in the strength of strokes, in the kind of contact, and in the way of hitting the cue ball must give different results it becomes easy to understand how large a number of different strokes an expert nursery-cannon player makes

use of during a big break of close cannons.

Although it is thus impossible to give a comprehensive description of nursery cannons, the positions which will be given in this chapter will be typical of positions which constantly occur during a run of these cannons and consequently they will illustrate some of the leading features of nursery-cannon play.

Notwithstanding that the variety of positions in nursery-cannon play is so extensive, practically all the positions are modifications of what may be termed the two ideal nursery-cannon positions. Diagram 734 illustrates one of these ideal positions and Diagram 735 the other.

In the position shown on Diagram 734 the cannon is a thin ball-to-ball stroke off the white, and in the position shown on Diagram 735 the stroke to retain position is a kiss-cannon off the red.

With the balls in the ideal position shown on Diagram 734 a well-played stroke will leave position for a very similar stroke off the red ball. The chief thing to be careful about when playing the cannon with the balls in the position shown on Diagram 734 is to move the first object ball—here the white—as little as possible, otherwise a cover may result. In order that the ball may be moved as little as possible it should be taken very thinly and the strength of the stroke should be so gauged that the cue ball only travels a short distance after its contact with the second object ball. When the strength is good the cue ball will take up a position close to the cushion. It may stop just short of the cushion, or it may touch the cushion and rebound a short distance. The stroke is a better one when played with sufficient strength to cause the cue ball to touch the cushion than it is when little more strength than is sufficient to cause the cue ball to reach the red is used, for extremely gentle

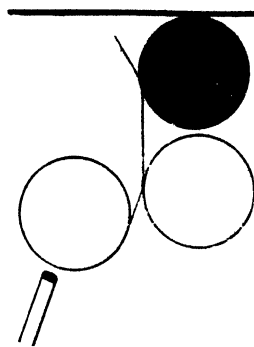
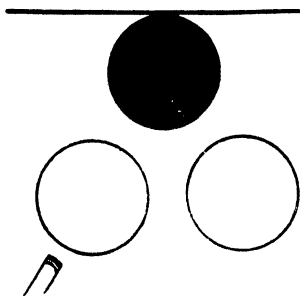


DIAGRAM 734.—An ideal position for nursery-cannon play. A thin ball-to-ball stroke off the white should leave position for a similar stroke off the red. Another ideal position is shown on Diagram 735.



nursery-cannon play. Perfect position can be retained by means of a kiss-cannon off the red.

strokes in nursery-cannon play often result in the cue ball remaining in contact with the second object ball. In playing this cannon the cue ball should be struck below the centre, as a low hitting of the cue ball minimises the chance of its remaining in contact with the second object ball when the stroke has been played with very gentle strength. Professional players elevate the butt of the cue for most strokes during a run of nursery cannons, and although they hit the cue ball at a point which is about half-way up, the downward hitting of

lifting of the cue produces the same effect as a low hitting of the cue ball

with a horizontally-held cue. This method of playing close cannons is not, however, an easy one to acquire. When playing the cannon illustrated on Diagram 734—or any other close cannon—the cue should be shortened—that is to say, it should be held several inches farther from the end of the butt than it usually is—for this shortening of the cue makes it considerably easier to play with correct strength. As a matter of fact, just as in golf one club is not suitable for the various kinds of strokes that have to be played, so too in billiards—though, of course, not to the same degree—one cue is not an ideal cue for every stroke on the table. For example, the use of a long cue with the rest may obviate the necessity of having to use the half butt; a short, light cue is better for close cannons and touchy little strokes than a long, heavy cue; a heavy cue is more adapted for strong screws and forcing strokes than a light cue, and an ordinary cue is a long way from perfection for massé strokes.

Diagram 736 indicates the kind of position which should be left when the cannon illustrated on Diagram 734 has been played correctly. This position may be almost identical with the one from which it resulted, and by means of a well-played stroke the first position can be left for the third stroke. In fact, very good players can sometimes make a large number of cannons by passing backwards and forwards across the face of the balls, skimming them so lightly that it takes quite a number of strokes to remove them an inch. Cook, who is a great nursery-cannon player, is extremely expert at this particular kind of close cannon, and will often purposely take the first object ball so thinly that only the referee standing close at hand and the spectators in the immediate vicinity are able to perceive the slight tremor of the lightly-grazed ball.

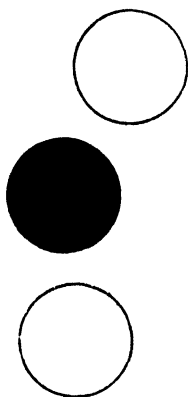


DIAGRAM 737.—An example of the cover that may result from a badly-played stroke with the ball situated as shown on Diagram 734. The cue ball is in the position shown.

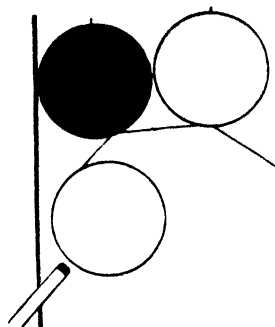


DIAGRAM 736.—The kind of position which should result from the position illustrated on Diagram 734.

With the balls as shown on Diagram 734 the player must, as already stated, be careful to move the first object ball very little indeed, otherwise the cannon may easily result in a cover for the next stroke. Diagram 737 is illustrative of the kind of position that may be left as the result of a badly-played stroke from the position on Diagram 734. This cover is a very decided one, but even without the object white getting as much behind the red as shown here, a cover may still occur.

Diagram 738 illustrates a position which is a modification of the ideal

nursery-cannon position shown on Diagram 734. Here, the cannon is an extremely thin one, and can only be made by a stroke that little more than grazes the first object ball. Although this cannon can be made by a very gentle stroke, such a stroke is not always a very safe one, for should the cue ball after touching the first object ball fall over just in the slightest degree—and there is always a tendency for the cue ball to rock a little in these extremely gentle strokes—it may either fall on to the second object ball and remain touching it, or it may fall away and not touch the second object ball at all. The contact with the second object ball can only be a very thin one when the cannon is made all right, so that it can easily be understood how little the cue ball has to fall away after hitting the first ball in order for the cannon to be missed. When the first object ball is taken exceedingly thinly—just slightly grazed—even a relatively fast stroke will move it very little, and the cannon may be played with sufficient strength to cause the cue ball to rebound some little distance from the cushion, and by the use of some check side it is quite possible with this stroke to obtain the ideal position shown on Diagram 734 or something very like it. Good position can also be left by a stroke which causes the cue ball to rebound only a slight distance from the cushion.

Diagram 739 illustrates another thin-stroke nursery-cannon position which is a variation of the one shown on Diagram 738. Here again the contact with the first object ball has to be a very thin one indeed, although just a grazing stroke is not absolutely essential for the making of the cannon. In order, however,

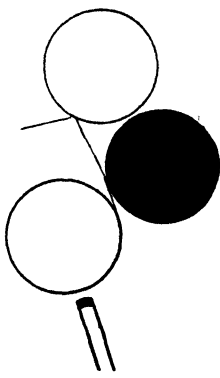


DIAGRAM 739.—An extremely thin nursery-cannon stroke. A variation of the stroke illustrated on Diagram 738.

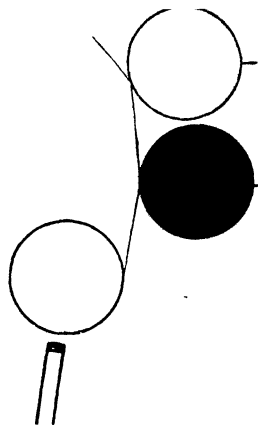


DIAGRAM 738.—An extremely thin nursery-cannon stroke. A modification of the ideal nursery-cannon position as illustrated on Diagram 734.

that the resultant position may be a good one, the contact with the first object ball should be exceedingly fine, for the finer this ball is taken the fuller will the cue ball get on to the second ball. If through not taking the first object ball sufficiently thin the second object ball is taken thinly the stroke may easily result in a cover, especially if it has not been played with exceedingly gentle strength, for the tendency of the stroke will be to send the first object ball—here the red ball—behind the other ball. When instead the first object ball is only just grazed it is barely moved—it may only just rock—and the cue ball gets fairly full on to the second object ball and thus all possibility of a cover is avoided. A crisp little stroke with bottom should be

used for this stroke to avoid any chance of the cue ball remaining in contact with the second object ball.

Diagram 740 shows a placing of the balls which is hardly a nursery-cannon position owing to the cue ball being some little distance from the object balls. A gentle stroke direct on to the object balls will, of course, bunch the balls, but although they may be thus placed close to each other, unless the stroke is very well played the cue ball may easily get too much between the object balls for the resultant position to be anything like an ideal one for nursery cannons. It is, however, quite possible to obtain the ideal position or something very near it by playing off the cushion instead of direct on to the balls. Good judgment is required as to where the cushion must be hit, for in order that the leave may be a good one the cue ball after hitting the cushion must take both balls very thinly. In the diagram the line drawn from the cue ball to the cushion denotes the line of aim only, and not the point of the cue ball's contact with the cushion. The point of contact is indicated by the intersected semicircle. (Except when the line of aim is at a right angle to the cushion the cue ball must always strike the cushion some distance from the point met by the line of aim, and the more acute the line of aim the greater will this distance be.)

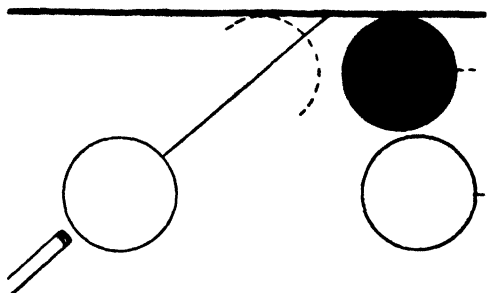


DIAGRAM 740.—A placing of the balls from which it is possible to get very good nursery-cannon position by means of a cannon made by hitting the cushion in front of the red ball. The line drawn from the cue ball to the cushion shows the line of aim and the intersected semicircle indicates the cue ball at the moment of its contact with the cushion. Diagram 741 further illustrates the stroke and Diagram 742 indicates the good position which may result from a well-played stroke.

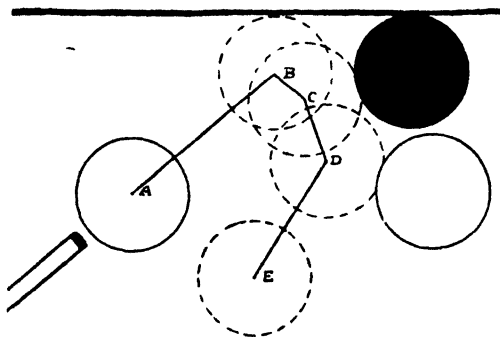


DIAGRAM 741.—The cannon off the cushion from the position illustrated on Diagram 740. The intersected circles B C and D show the cue ball in contact with the cushion, the red ball and the object white respectively, and the circle E indicates the good position which the cue ball may take up when it has taken both object balls thinly. The continuous line A B C D E indicates the path over which the centre of the cue ball travels.

Diagram 741 further illustrates the stroke just described. The intersected circle B indicates the cue ball at the moment of its contact with the cushion, the intersected circle C indicates its contact with the red ball, the circle D its contact with the object white, and the circle E its position when it comes to rest as the result of a gentle stroke. If the object balls are taken very thinly a gentle stroke will move them very little, and when they are only grazed their position after the stroke will be little different from what it was previous to the stroke having been played.

Diagram 742 indicates the very good position which may result when the cue ball in the stroke shown on Diagrams 740 and 741

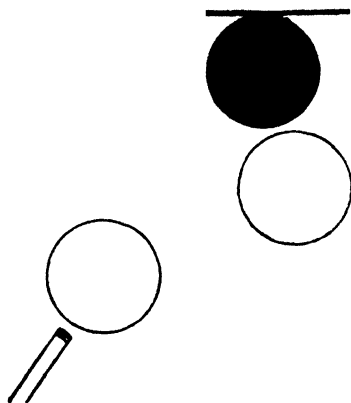


DIAGRAM 742.—An example of the good position which may result from the position illustrated on Diagram 740 when the cushion is hit before the object balls, and both object balls are taken very thinly.

the centre. No side is necessary, but if it be desired to retain position for another kiss cannon the cue ball should be struck with some right side, as this will tend to prevent the red ball travelling forward along the cushion. Very good nursery-cannon players with the balls situated as shown

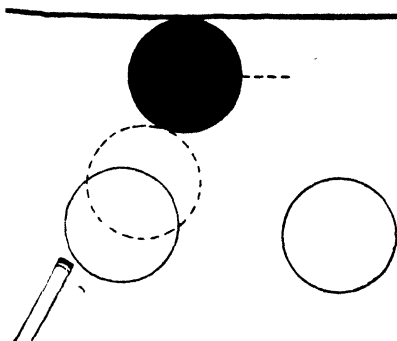


DIAGRAM 744.—A kiss-cannon position. A variation of the position illustrated on Diagram 743. The use of left side is imperative for the retention of position. The intersected circle shows the cue ball at the moment of its contact with the red.

takes both object balls so thinly as to barely move them, but good position, though of a different kind, will often result from a stroke which is not thin enough to leave the balls as shown on Diagram 742.

Diagram 743, which is a reproduction of Diagram 735, illustrates the second ideal nursery-cannon position. Here, the cannon is a kiss off the red, and the stroke should be played quite gently. Aim should be taken *full* on to the red and the cue ball should be struck below

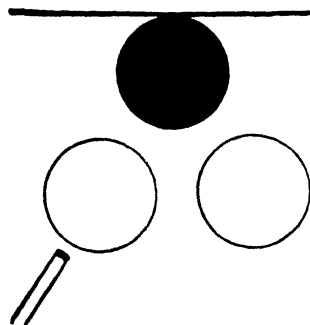


DIAGRAM 743.—An ideal nursery-cannon position. A kiss cannon off the red, it played with correct strength, will either leave position for another similar kiss cannon or for a ball-to-ball cannon off the white according to the kind of contact which the cue ball makes with the white after its rebound from the red, and according also to the distance which the red is made to travel along the cushion.

on Diagram 743 often make quite a number of consecutive kiss-cannons, keeping practically the same position for each stroke, although running the balls along the cushion. In a series of kiss-cannons with the first object ball either touching or almost touching the cushion side on the cue ball is often of the greatest assistance in retaining position, for one side rolls the object ball along the cushion—as already explained in the chapter on *SIDE**—and

* See page 97 ; also Diagram 126.

thus sends it forward, whereas the reverse side tends to keep the ball where it is.

Diagram 744 shows a variation of the position illustrated on Diagram 743. Here, plenty of left side is imperative in order that the red ball may be rolled forward along the cushion. Aim must be taken nearly full on to the red, but just slightly to the right. The cannon as a stroke is quite simple, but the cue must get a little below the object white in order for good nursery-cannon position to be retained.

Diagram 745 shows a position which is a modification of the one illustrated on Diagram 744. Owing to the second object ball—here the red ball—being a considerable distance from the first ball the cannon position, but it is given

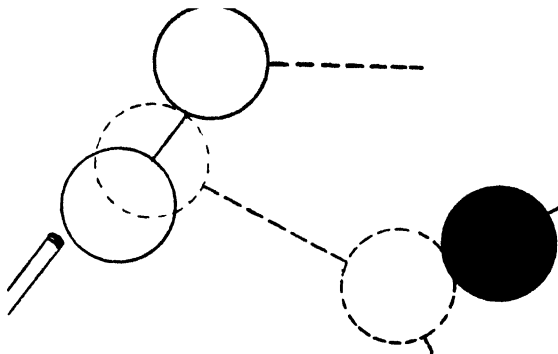
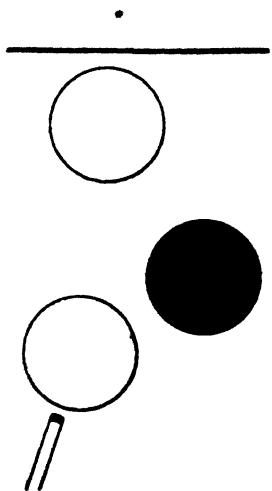


DIAGRAM 745.—A kiss-cannon position. A modification of the position illustrated on Diagram 744. Very good nursery-cannon position may be obtained as the result of this cannon but the stroke requires very good handling. One intersected circle shows the cue ball at the moment of its contact with the object white, and the other its contact with the red. The intersected line connecting the intersected circles indicates the cue ball's line of travel after its contact with the object white. The intersected line from the object white indicates the distance this ball should be rolled along the cushion. Diagram 746 illustrates a position which has resulted from this kiss cannon.



of good position
which may result from the position
illustrated on Diagram 745 when the kiss-
cannon is a perfect stroke.

the red ball—being a considerable position is not really a nursery-cannon here, firstly because the cannon is made by the same kind of stroke as is used with the balls situated as on Diagram 744, and secondly because it is quite possible by means of a very well-played stroke to bring all the balls together into very good nursery-cannon position. Plenty of left side must be used in order to roll the object white along the cushion—as indicated by the intersected line drawn from the ball—and aim should be taken nearly full on to the ball but slightly to the right. One intersected circle shows the position of the cue ball at the moment of its contact with the object white, the other its position at the moment of a favourable contact with the red, and the intersected line drawn from one circle to the other indicates the direction in which the cue ball should travel from the object white to the red in order that the resultant position may be a favourable one from which to begin a series of nursery-cannon strokes.

Diagram 746 illustrates the kind of position which may result from a very well played cannon with the balls in the position shown on Diagram 745. The strength of the stroke has, however, to be very well judged in order to cause the object white to travel the correct distance—it is no easy matter to gauge the strength required with the object ball lying against the cushion—and the contact with this ball has also to be a very exact one in order that the cue ball may be thrown off in the direction indicated on Diagram 745. A very slight alteration in the degree of fulness of contact with the white appreciably alters the direction in which the cue ball is thrown off. The position shown on Diagram 746, which may result from the

position illustrated on Diagram 745—and which as a matter of fact has resulted from a stroke played on the table—is not very far removed from the ideal nursery-cannon position illustrated on Diagram 734, and this ideal position can often be obtained from locations of the balls similar to those illustrated on Diagrams 744 and 745. As already stated, there are two ideal nursery-cannon positions, and practically all the positions which occur whilst an expert player is taking the balls along a cushion are variations of these two positions. Moreover, the ball-to-ball ideal position often leads to the kiss-cannon ideal position and this in its turn just as often gives the ball-to-ball position.

Diagram 747 illustrates another nursery-cannon position wherein the stroke is a kiss off the object ball lying on the cushion. Here, by playing with *right* side the object white can be kept where it is—*left* side on the cue ball would cause the white to travel along the cushion—and if the strength of the stroke is so well gauged that the cue ball only just reaches the red and at the same time takes it quite thinly, practically the same position will be left for the next stroke. Indeed, a clever player with the balls situated as shown on Diagram 747 can make quite a number of consecutive kiss-back cannons, especially as the use of side—left or right as the location of the balls may decide—assists in the retention of the position. If a number of practically identical strokes are played without the second ball being perceptibly moved the strokes become ROCKING CANNONS, and these cannons will be described in the next chapter. If with the balls as shown on Diagram 747 the kiss-cannon is played with a little more strength than is necessary to cause the cue ball to just reach the red, the resultant position—provided that the cue ball takes the red quite thinly—may be very similar to the ideal nursery-cannon position illustrated on Diagram 734.

Professional players who make long runs of nursery cannons often run the balls along a considerable portion of the top cushion and then down one of the side cushions—generally from left to right along the top cushion and then down the right side cushion, as the balls can be got at quite easily this way round the table, whereas the reverse way round necessitates left-hand play or the use of the rest after the balls have travelled a certain distance. Taking the balls from

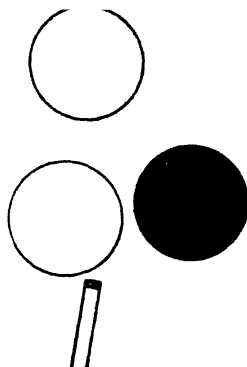


DIAGRAM 747.—A kiss-cannon nursery-cannon position. Right side on the cue ball prevents the object ball from travelling forward.

the top cushion to a side cushion means, of course, turning a corner, and a very nice stroke is always required to do this without loss of nursery-cannon position.

An example of turning the corner is illustrated on Diagram 748. Here, the stroke is a slow screw from the red on to the white. The strength of the stroke has to be very nicely gauged in order that the red ball may travel just the required distance. Also, very accurate contact with the red is necessary in order that this ball may be given a correct line of travel. When the stroke is well played the cue ball travels to the object white with very little pace, and consequently sends it forward only a short distance. In this way very good position may be left for a run of close cannons down the side cushion.

Diagram 749 illustrates how the corner may sometimes be turned by the assistance of the angles of the pocket. The first object ball—here the red—is made to strike the lower angle in such a way as to ensure its rebounding on to the upper angle and thence down the table, as illustrated by the intersected line on the diagram. This stroke is very

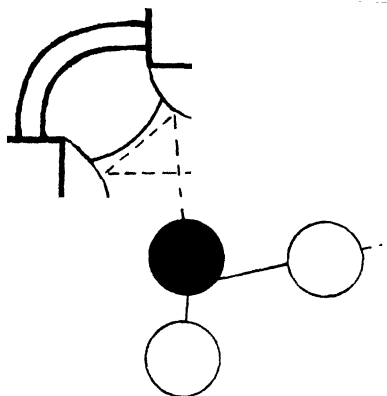


DIAGRAM 749.—Turning the corner—from the top cushion to the side cushion—by causing the first object ball to travel down the table in a line parallel with the side cushion after having struck both angles of the pocket.

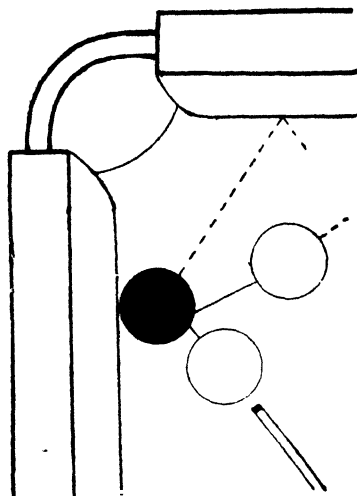


DIAGRAM 748.—Turning the corner—from the top cushion to the side cushion. A slow-screw cannon.

simple in theory but much less so in practice. In the first place the angle must be struck practically at one particular spot, otherwise the ball will not be thrown down the table in a line parallel with the side cushion—in fact, when the first angle is not struck at the correct point the ball will sometimes not be thrown down the table at all, but will rebound from the second angle on to the first angle again and from this angle will travel *away* from the side cushion—and secondly, even when the contact with both angles has been absolutely correct, unless the stroke has been played with very good strength the ball will either travel too far or else not far enough down the cushion, and it is by no means easy to gauge the strength necessary to make a ball travel a measured distance after a contact with both the angles of a pocket. Again, care has to be taken to get correctly on to the second object ball.

There are many other turning-the-

corner strokes, all differing in some detail or other from the examples just given, and only a high-class player who knows exactly when to play the turning stroke can with any certainty work the balls past the pocket without loss of nursery-cannon position. Professional players like Reece and Stevenson, who have so assiduously practised close-cannon play, never make the mistake of attempting to turn the corner too soon nor of carrying the balls too far along the top cushion before taking them from one cushion to the other, and a stroke or two before actually turning the corner they work the balls into a favourable position for the turning stroke. Once the balls are in good position on the right top side cushion professional nursery-cannon players are able to work them—always keeping them close together—right down to the centre pocket. It is even possible to carry the balls past this pocket, still keeping them together, but professionals when successful in taking them as far as the centre pocket almost invariably end the nursery-cannon break by an in-off into the centre pocket owing to the very great difficulty which working the balls past the pocket without loss of position presents even to the greatest of players.

Although plenty of skill is required to make a considerable number of nursery cannons with all three balls close to a cushion, it is infinitely more difficult to keep the balls in position for close cannons when all the balls are away from any cushion. Players who from an ideal position on a cushion are able to make as many as 20 or 25 consecutive cannons at their best attempts can seldom make more than about half-a-dozen close cannons from the very best placing of the balls in the open part of the table. How difficult it is to make a number of close cannons with the balls away from a cushion can easily be determined by placing the two object balls close together on the baulk line and the cue ball in any desired position. Ordinary players can seldom make more than three cannons from such a placing of the balls without breaking up the close position, and often cannot even make three without doing so. A cover may easily occur when playing nursery cannons with the balls against a cushion, but still more easily when playing close cannons away from a cushion.

Diagram 750 illustrates the best kind of position for a series of close cannons with the balls away from any cushion. The position is intended to be such that the contact with the object white has to be extremely thin in order for the cannon to be made. Owing, however, to the cue ball being so very close to the white it is an easy matter to just graze this ball. By playing the stroke so gently that the cue ball stops almost immediately it touches the red, position will be left for an almost identical cannon off the red. This is because the very thin and gentle contact which the cue ball makes with the object balls hardly moves either

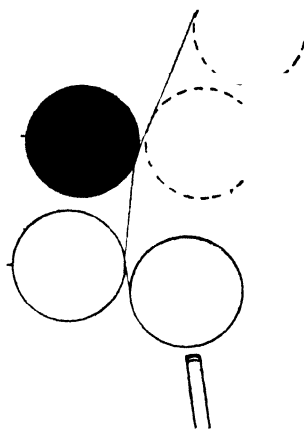


DIAGRAM 750.—A close-cannon position away from a cushion. The intersected circle close to the red indicates where the cue ball should stop when the stroke is played with correct strength. The second intersected circle indicates how a cover may be left when the cannon is not played sufficiently gently. The grazing contact with the object balls barely moves them.

of them. In fact, when both balls are only just grazed they may only rock and not be moved at all. When, however, this thin stroke is played with a little too much pace a cover generally occurs. On Diagram 750 the intersected circle close to the red ball indicates the correct position which the cue ball takes up when the strength of the stroke has been very good, and the other intersected circle indicates a possible resting place of the cue ball when the stroke has been played quite correctly as regards the contact with both object balls, but with a little too much strength. When the cue ball travels as far as indicated by the second intersected circle the cover will be a decided one.

Diagram 751 illustrates the kind of cover which arises when with the balls situated as on Diagram 750 the thin cannon is played with a little too much strength. In fact, the object balls are in the identical positions in both diagrams and the farther intersected circle on Diagram 750 is the cue ball on Diagram 751.

With the balls in the position shown on Diagram 750 very clever players can make quite a number of cannons by just grazing the object balls and using very exact strength each time. Good amateurs—players who make a 50 break very frequently—find, however, that it pays to break up a close-cannon position in the open as soon as possible and revert to ordinary play.

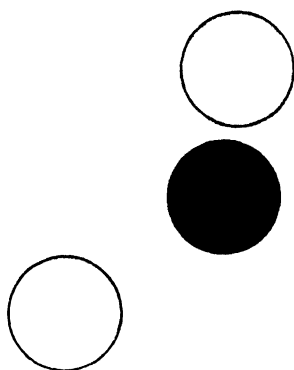


DIAGRAM 751.—A cover that may result from the position illustrated on Diagram 750 when a little too much pace is used in the thin cannon.

CHAPTER XXXV.

ROCKING CANNONS.

Under the rules in force to-day (1910) should the cue ball remain in contact with an object ball—or with both balls—the red ball is spotted on the billiard spot, the white ball on the centre spot, and the striker plays from the D. This rule *re* touching balls first came into force in March, 1898, but in October, 1907, it was temporarily superseded by a rule which compelled the striker to play from the position of the cue ball on the table, and in order to be able to score he had—when the cue ball was only in contact with one ball—either to play at the ball with which the cue ball was not in contact, or else he had to hit a cushion before a ball. The idea of this rule was to do away with the practical certainty of a scoring position which the spotting of the object balls gave a first-class player when playing from the D. By the old rule the touching of the cue ball and one of the object balls was sometimes against the player and at other times tremendously in his favour, and the new rule was an attempt to do away with this anomaly. It, however, proved to be a dismal failure, for professional players very soon found that it did not work at all well in practice, inasmuch as in the majority of cases the touching of the cue ball with an object ball meant the termination of the break.

Diagram 752 shows the cue ball in contact with the object white and is typical of positions which were adversely affected by the new rule, for with the balls as shown, although the red can be hit without moving the object white, no cannon is possible by a direct stroke off the red except by a *massé* stroke. A cannon off a cushion is, of course, always a possible stroke, but with the balls on the top cushion it could not be played off either side cushion but only off the left side cushion, and if the balls were any considerable distance from this cushion the stroke would be an extremely uncertain one, especially with the ball which would most likely be the first object ball touching the cushion.

Many positions were still more hopeless, and the example given on Diagram 753 will sufficiently demonstrate this. Here, the cue ball is in contact with the red and the object white is quite covered. The very best player would have but a faint hope of scoring from such a position by means of a stroke played by hitting a cushion before a ball.

The new rule had only a short life, but its existence made very big breaks possible by means of rocking cannons, and in 1908 Cook made a break of 1,000 unfinished which contained over 400 of these cannons.

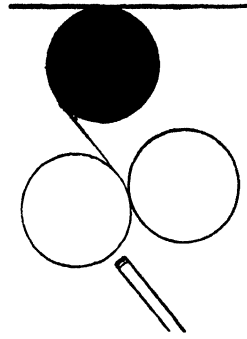


DIAGRAM 752.—A position in which no cannon off the red ball is possible by a direct stroke except by means of a *massé*. Red ball touching the cushion. Cue ball in contact with the object white. By a rule which was once in force, if the cue ball remained touching one of the object balls no score could be made except by a direct stroke off the other ball, or by means of stroke which caused the cue ball to strike a cushion before hitting a ball.

Diagram 754 illustrates a rocking-cannon position. By playing a kiss-cannon off the red with such exact direction that the cue ball gets quite thinly on to the object white and with such exact strength that the cue ball only travels a small fraction of an inch after its contact with the object white, it is quite possible to leave the same—or practically the same—position for the next stroke, for the gentle full contact with the red does not alter its position and the thin contact with the object white, if sufficiently gentle, does not move this ball but only causes it to *rock*, hence the term ROCKING CANNONS. When a cloth is new, or is at least in good condition with the nap not at all worn, the weight of a ball always causes it to sink a little into the nap, although this is quite imperceptible in the ordinary way. That this is so may be proved by placing a ball on a new cloth and moving it very gently indeed with a finger. It will generally be found that provided the touch is gentle enough the ball will rock back to the spot whence it

has been moved, no matter in which direction the slight movement with the finger has been given, thus proving that the ball rests in a kind of cup as it were. With the balls in the position shown on Diagram 754 any really good

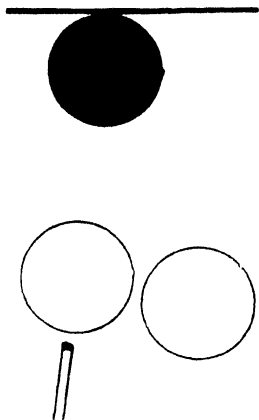


DIAGRAM 754. — The rocking-cannon position. Red ball touching the cushion. Cue ball about 2 inches from the red. Object white about an eighth-of-an-inch—or less—from the cue ball.

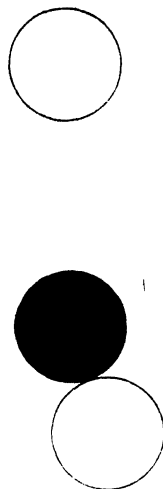


DIAGRAM 753.—A practically hopeless position under the rule which, when the cue ball remained touching an object ball, necessitated either a direct stroke on to the other ball or a stroke off a cushion on to one of the balls, before a score could be made. Cue ball touching the red. Object white 4 inches from the red.

player can make a fair number of rocking cannons even under the present rules before breaking up the position, but in playing stroke after stroke with the gentle strength that is necessary to retain the correct position the chances are that the break of rocking cannons will come to an end not through loss of position but through the cue ball remaining in contact with the second object ball.

Diagram 755 indicates the position that will be left when the cue ball remains in contact with the object white as the result of a kiss-back cannon from the position illustrated on Diagram 754, which has been played quite correctly as regards the direction in which the cue ball has been made to travel, but with just a shade too little strength. Whilst the rule which allowed the cue ball when in contact with one object ball to

be played on to the other object ball was in force, it mattered not whether in the position illustrated on Diagram 755 the cue ball was touching the object white or not, and thus a player with a very good touch could make a large number of rocking cannons before losing position. Indeed, the very fact that the touching of the cue ball and an object ball did not matter made it easier to retain position than would have otherwise been the case. Again, the more rocking cannons that were made under the obsolete rule the easier they became, because the constant *rocking* of the second object ball gradually deepened the faint depression in which this ball lay when the position was first obtained. Constant strokes, too, on to a ball lying tight against a cushion very soon form a cup-like hollow under the ball, and this further assists in the retention of position. Indeed, had it not been for this settling of the object balls which gradually takes place, Cook, with all his skill and his exquisitely delicate touch, could never have made anything at all approaching his great record of consecutive rocking cannons, even with the tremendous assistance which he derived from the rule concerning touching balls which was in force at the time.

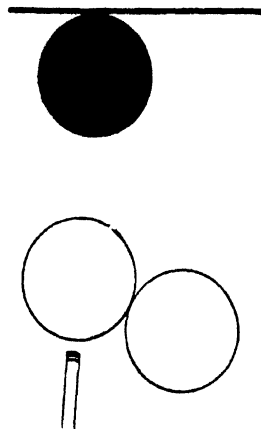


DIAGRAM 755.—A rocking-cannon position. Cue ball touching the object white. This position often resulted from the position illustrated on Diagram 754. Under a rule which was once in force the cue ball though in contact with the white could be played at the red and consequently the rocking-cannon position could be retained.

CHAPTER XXXVI.

PENDULUM CANNONS.

A stroke sometimes played by professional players is the pendulum cannon, so called because in a series of these strokes the cue ball travels backwards and forwards like the pendulum of a clock, the while the object balls remain practically stationary.

Diagram 756 illustrates a position for pendulum cannons. The object balls are not quite dead, but are all but touching

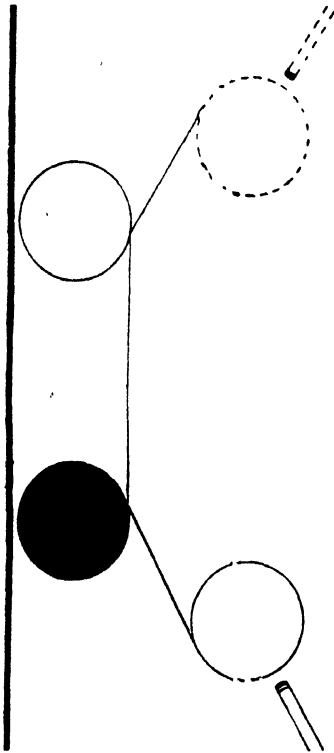


DIAGRAM 757. — A pendulum - cannon position. A variation of the position illustrated on Diagram 756. Object balls quite close to but not touching the cushion and about 4 inches apart. The intersected circle indicates the position of the cue ball for the second stroke when the first has been correctly played.

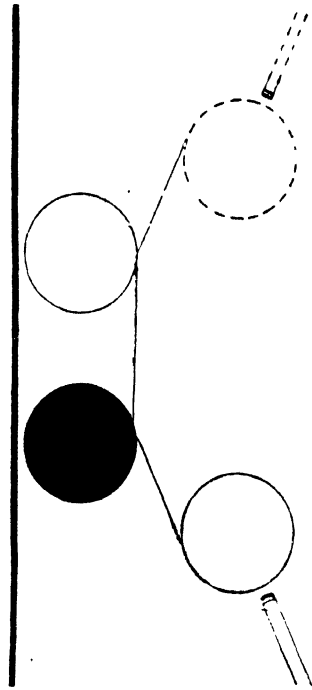


DIAGRAM 756. — A pendulum - cannon position. Object balls about $1\frac{1}{2}$ inches apart and just away from the cushion. The intersected circle indicates the position from which the next stroke will be played when the first stroke has been a correct one.

the cushion, and a well-played stroke will leave a very similar stroke from the other side of the table, for when the contact and strength have been good the cue ball's new position will be very nearly as indicated by the intersected circle, and the object balls will be in practically the same place that they were previous to the stroke having been played, for the gentle thin contact which the cue ball makes with them causes them to touch the cushion and just rebound from it. Many good amateurs can make a fair number of pendulum cannons if they happen to get

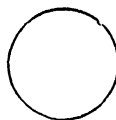
the balls in correct position for the stroke, but very few can exceed a dozen, and Reece's record of 40 consecutive pendulum cannons, made in 1907, which is also the record for this particular cannon, was an exceptionally fine performance.

Diagram 757 illustrates another pendulum-cannon position. Here, the object balls are considerably farther apart than in the position shown on Diagram 756, and although to a first-class player there is not a very great difference between the two positions as regards pendulum cannon possibilities, increasing distance between the object balls soon makes the pendulum cannons very difficult and finally impossible.

Although in the positions illustrated on Diagrams 756 and 757 the object balls are not touching the cushion, pendulum cannons are still possible with the balls tight against a cushion. When, however, the first object ball is touching the cushion the stroke has to be fairly fast or else the contact has to be exceedingly thin, otherwise the cue ball will be kissed away and the cannon will be missed. When the second object ball is touching the cushion loss of position may easily occur through the cue ball being kissed away the moment it touches this ball instead of travelling past it in the manner indicated on Diagrams 756 and 757.

A lengthy sequence of pendulum cannons demands not only great delicacy of touch but also extreme accuracy of contact with both object balls, and consequently such a sequence is of rare occurrence even in professional matches.

Diagram 758 illustrates the kind of position that may result from a pendulum stroke when the second object ball is taken very thinly, and when in addition to this the stroke is played with a little too much pace. With a leave at all like the one shown on Diagram 758 pendulum-cannon position is of course at an end, but the player may have a run-through cannon to continue with. An incorrectly-played pendulum stroke does not, however, always leave a fairly easy scoring position to continue with, and sometimes the resultant position may be very bad indeed.



that can easily occur when playing pendulum cannons. The white ball away from the cushion is the cue ball.

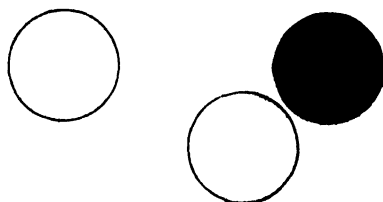


DIAGRAM 759.—An example of the relatively bad position which may result from the cue ball getting much too full on to the second object ball when playing or attempting to play a pendulum cannon. The ball quite close to the red is the cue ball.

Diagram 759 illustrates the kind of bad position which may result from a pendulum-cannon position when the cue ball instead of taking the second object ball quite thinly gets pretty full on to it, and when in addition to this the cue ball little more than reaches the second object ball. The position is a bad one because although a cannon—off either ball—may not be difficult just as a stroke, unless it is very well handled the resultant position may easily be a very bad one.

CHAPTER XXXVII.

CRADLE CANNONS.*

In January, 1907, Lovejoy created a sensation in the billiard world by making a break of 603, which contained 284 consecutive cannons, made by means of what afterwards became known as the double-kiss cradle-cannon position. It is said that Lovejoy discovered the position and its potentialities in 1905, but that two years elapsed before he was able to work the balls into the proper position in the course of a public match. Be that as it may, he had no sooner exploited the stroke in public than he began making breaks of 2,000 or more. Then Dawson, Cook, and Reece, and later on Williams and Aiken, set themselves to make huge breaks by means of the new stroke, and before long five-figure breaks became quite ordinary, and after Dawson had made a break of 23,769 and Cook one of 42,746, Reece was credited with a break of 499,135. Such scoring finally put an end to what by this time had become farcical billiards, and on September 2nd, 1907, a rule was passed by the Billiard Association which made a cradle-stroke cannon a foul. None but players of exceptional ability were able to score by means of cradle cannons, for only by the very greatest refinement of play was it possible to work the balls into the correct position. Once the balls were in position, however, it was an easy enough matter for any good player to keep them there. The first few strokes had to be played with care, but as the break proceeded retention of the position became less and less difficult, and later on a good player could hardly lose the position except by an accident.

Cradle cannons, when once a large number have been made, are nothing more nor less than a series of trick shots. By the time the break runs into thousands, the cue ball, by reason of its constant journeys to the first object ball and back again, eventually makes a slight rut or groove in the cloth. This rut may be almost imperceptible to the touch, but it will be quite sufficient to prevent such a slowly-moving ball from deviating from its correct path unless the stroke has been played very badly indeed.

There is, however, another factor which assists in the retention of position to a far greater extent than this rut, and one that makes itself felt quite early on. The constant bumpings of the cue ball against the first object ball—the first object ball is hit every time practically full in the face—gentle though they are, in a very short time cause this ball to settle in the nap of the cloth, that is to say, a slight hollow is formed. Not only this, but the second object ball in time also settles in the cloth. These hollows, very faint though they may be at first, are quite sufficient to keep the balls from moving when the contact is as gentle as it has to be. As the cannons are continued these hollows get more and more decided, until at last each ball rests in a kind of cup, which can be quite easily felt by the finger. When a thousand cannons have been made one might almost write that it is difficult to move the first object ball. At any rate, when the cannons are being played without much care—for now little is needed—the first object ball may often be seen trying to leave its cup and falling back into it. The biggest breaks of cradle cannons were all unfinished. Why? Because the first object ball was resting in a cup and could not be dislodged unless its removal were intentional. This settling of the object balls will in time take place on any cloth, but does not become apparent nearly so quickly on a worn cloth as it does on a cloth in good condition.

* Also termed ANCHOR CANNONS.

The gigantic breaks to which reference has already been made were all compiled on tables the cloths of which we may assume were in the best of condition and thus eminently favourable for retention of the position, when once it had been gained. Another thing worthy of note is that most of the big cradle-cannon breaks were made in the right top corner of the table, as the position was gained there after running the balls along the top cushion. As several mammoth breaks were made on the same table in this right top corner, the cups already referred to were not only ready made for the second break, but even assisted in the gaining of the position. The cloth on which Reece is credited with having made a break of nearly half a million was on exhibition in several towns in England, and the cups in which the object balls had rested and the ruts in which the cue ball had travelled to and fro were quite plainly discernible, even when standing at a distance from the cloth.

The farcical nature of Reece's break of 499,135 unfinished may be understood when it is stated that it began on June 3rd, 1907, and continued until July 6th, and that in order to get anyone to witness it spectators were, after the first few days, admitted free. In order, too, that the so-called match could be finished within the specified time more than one all-night sitting was necessary. In one instance Reece played—with intervals for rest—from 11-15 a.m. until 5-15 a.m., and it is easy to imagine his so-called opponent, Chapman—if present—asleep in his chair and the marker and referee more asleep than awake. A game of Snooker or Indian Pool was generally played at the termination of each session's cradle cannons, but although this necessitated the billiard balls being removed from the table, this did not matter at all, as it was so easy to replace each object ball in its hole and the cue ball in its rut at a correct distance from the first object ball. If anyone asked a professional what he thought of Reece's half-a-million break the almost invariable answer which he received was, "Do you

really believe he made it?" Farcical in the highest degree as the break was from the billiard point of view, it is perhaps worthy of being recorded as a feat of physical endurance.

By the present-day rules, which allow twenty-five ball-to-ball cannons without the cue ball touching a cushion, the double-kiss cradle cannon becomes a legitimate stroke once more, and although it is hardly likely that any professional will take much pains to try and get the position, it is quite possible that it may occasionally be set up when the balls happen to be so placed that only one or two well-judged strokes are necessary to obtain it, more especially since failure to set up the cradle-cannon position does not mean loss of position for ordinary play.

Diagram 760 illustrates the ideal cradle-cannon position. It is impossible to give exact measurements as to the distance of the object balls from the brink of the pocket, for these distances

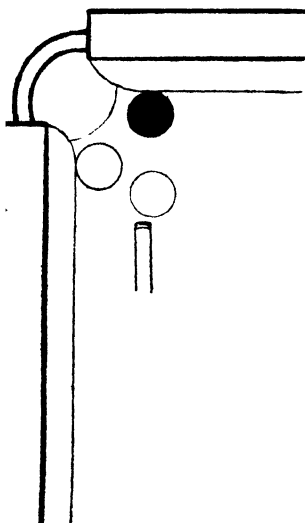


DIAGRAM 760.—The ideal cradle-cannon position. Object balls about $1\frac{1}{2}$ inches apart and both touching a cushion. Cue ball 2 inches to $2\frac{1}{2}$ inches from the red.

will slightly vary on different tables owing to the difference in the size of the pockets and the difference in the cut of the angles. The best measurement is the distance between the object balls, and this should always be considerably less than a ball's diameter, and, generally speaking, if the balls are $1\frac{1}{2}$ inches apart and are both touching a cushion, they will be correctly placed. With the balls as shown on Diagram 760 the cue ball should be struck with running side—left-hand side on the diagram—and aim should be taken for a full contact with the red. The cue ball will be kissed back to cannon thinly on to the white, and if the strength of the stroke has been correct, the position for the next stroke will be the same, or practically the same, as the one set up for the first stroke. The moderate player will generally play the stroke with too much strength at first, but very little practice will give him the correct strength and he will then be able to

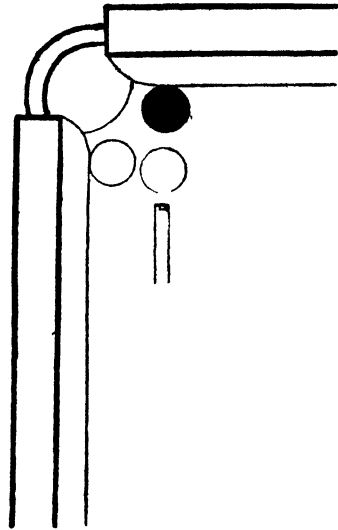


DIAGRAM 761.—A cradle-cannon position. Object balls about $1\frac{1}{2}$ inches apart and both touching a cushion. Cue ball half-an-inch to three-quarters of an inch from the red. This position is not nearly so good as the one on Diagram 760 owing to the cue ball being so near the red.

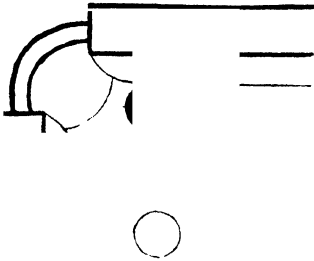


DIAGRAM 762.—A cradle-cannon position with the cue ball at a considerable distance from the first object ball. Object balls about $1\frac{1}{2}$ inches apart and both touching a cushion. Cue ball about 4 inches from the red. This position is a better one than the one illustrated on Diagram 761.

make quite a number of cannons without losing the position. Unless, however, the red be hit quite full—that is, before it has had time to settle into the cloth—it will travel towards the pocket or else away from it, and in either case, this means the loss of position.

Diagram 761 shows a position that is likely to occur sooner or later when playing cradle cannons. A stroke has been played too gently, and although the cannon has been made, the cue ball has not travelled sufficiently away from the white, and has consequently remained too near the red. To get the position again, a very crisp little stroke is required, and unless a player can play a very touchy stroke—using left side and playing full on to the red—he will either make a foul or else barely hit the cue ball; in the latter case the cue ball will either not be kissed back sufficiently to make the cannon, or else it will only just cannon, with the result that it will be still nearer the red for the next

stroke, putting aside the possibility of its remaining in contact with the object white.

Diagram 762 shows a position with the cue ball too far from the red. The previous stroke has been played with too much strength, and consequently the cue ball has travelled too far after its contact with the object white. This position is not nearly so bad as the one shown on Diagram 761, and the correct position should be regained without any difficulty. As before, the cue ball should be struck with left side.

Diagram 763 shows a position which will sometimes occur during a run of cradle cannons. Here, the cue ball is a little farther from the cushion than it ought to be for ideal position. The correct position can, however, easily be regained by taking the red a little less—but only very little less—than full, and using left side.

One or two other positions may also sometimes occur—in one the ball which is the second object ball, in all the diagrams given here, has to be thinly skimmed before contact is made with the other ball—but many hundreds and even thousands of consecutive cannons can be made without any position arising which is not illustrated in this chapter.

The very ordinary player—that is, the player who seldom makes a 20 break—cannot, of course, aspire to making cradle cannons even from a set position, but even he can, with a little practice, make quite a respectable number by means of a trick. The trick is as follows: Place the object balls as shown on Diagram 760, taking care that they are just $1\frac{1}{2}$ inches apart and touching the cushions. Then with the third ball give the other two balls a smart knock on the top. This will cause the balls to sink in the cloth and cradle cannoning will at once become very simple indeed, for the balls will then be very loth to move from their resting place. The player who resorts to this device is only exaggerating what took place long before Dawson, Reece, and others ran to game with gigantic unfinished breaks compiled by means of the double-kiss cradle cannon.

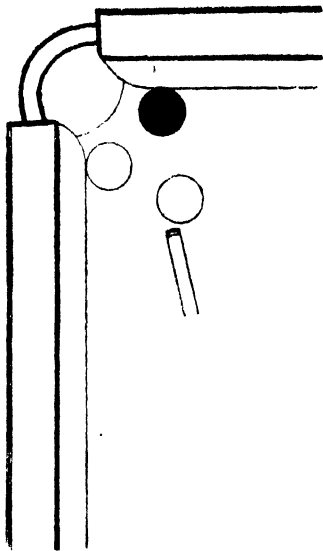


DIAGRAM 763.—A cradle-cannon position. Object balls about $1\frac{1}{2}$ inches apart and both touching a cushion. Cue ball about 2 inches from the red and 3 inches from the cushion against which the object white is lying.

CHAPTER XXXVIII.

THE JAM STROKE.

In 1891, Taylor made a break of 1467 chiefly by means of what afterwards became known as the jam stroke. Early on in the break Taylor got the balls together close to the top cushion, and then by a series of close cannons along this cushion he ran them right up to the left top pocket, and finally managed to lock them between its shoulders. Then playing first from one side of the jammed balls and then from the other he made several hundred further cannons before the break finally came to an end.

Diagram 764 illustrates the position with the balls jammed between the angles of the left top pocket, and in order for the balls to be properly positioned one must not be closer to the pocket than the other. On a table with big pockets the balls—especially if under regulation size—will, when correctly placed, slightly overhang the brink of the pocket, but when the entrance to the

pocket is a very narrow one full-size balls will be some little distance from the fall of the slate when the position is properly set up.

Although it is easy enough to make a fair number of jam-stroke cannons when the position is set up by hand, only a very good player indeed can go on for any length of time without causing one of the balls to enter the pocket. So long as the cue ball makes the same or very nearly the same kind of contact with each object ball the position will be maintained, but if one ball be taken appreciably fuller than the other it will be squeezed past its neighbour, and though a stroke or two more may be made the break of cannons will in all probability end by reason of the ball which was originally taken too full falling into the pocket. It is true that if through an incorrect stroke one ball is squeezed only just a little past the other, correct position can often be regained by squeezing in the ball which was taken too thinly in the previous stroke, for squeezing one ball in a little must squeeze the other out a little. Very good play, however, is required to get the position again when either object ball gets out of place.

The smaller the pocket and the bigger the balls the easier it is to keep the

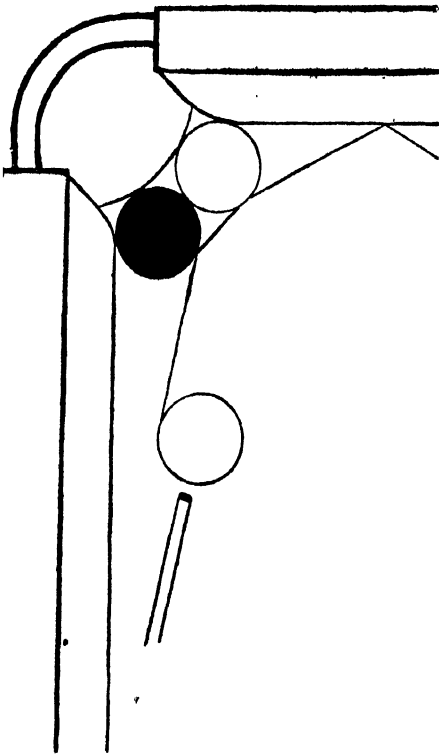


DIAGRAM 764.—The position for the jam stroke. The continuous line drawn from the cue ball indicates the distance the cue ball should travel and also its line of travel when the stroke is correctly played.

position, and inversely the bigger the pockets and the smaller the balls the sooner will it be lost. This is, of course, because when the pocket is large the balls will be closer up to it—they may even slightly overhang it—than when the entrance to it is narrow.

The jam stroke is correctly played only when the cue ball after hitting the object balls travels well away from them. It should also come to rest at the finish of each stroke fairly close to a cushion. With the cue ball a considerable distance from a cushion it has to be played very full on to the object balls. A stroke nearly full on to the balls may unlock them, and even should it still leave them properly jammed the cue ball will remain very close to and in front of them, and loss of position will in all probability quickly result from this bad location of the cue ball.

On Diagram 764 the continuous line drawn from the cue ball indicates its line of travel when the stroke is correctly played, and the second stroke—played from the other side of the object balls—should place the cue ball very near the spot from which the first stroke has been played. With the object balls locked in the right top pocket, the stroke from the top cushion is a right-handed one, but that from the side cushion must either be played with the left hand or with the rest—unless a player is able to play with his right arm behind his back. With the balls jammed in the left top pocket the stroke from the side cushion is a right-handed one, and that from the top cushion can also be played with the right hand by stretching right across the table. The best way, however, of playing the jam stroke is by alternately using the right and left hand.

The jam stroke was rendered obsolete many years ago by a rule which made it compulsory for the player to play from the D with the red ball on the billiard spot and the white ball on the centre spot, in the event of his having set up the position either by accident or design.

CHAPTER XXXIX.

GETTING POSITION FOR A DROP CANNON.

Perhaps the most important stroke in the whole game is the ordinary drop cannon from the D. The stroke is a constantly-occurring one with all classes of players. The professional who depends upon refined top-of-the-table play for the bulk of his scoring more often than not gets the balls at the top of the table by the agency of a drop cannon, and when, by reason of some stroke which has not been sufficiently accurate for a retention of top-of-the-table position, he is compelled to abandon this method of play he as a rule is able to regain the position in two strokes, for as often happens when the position of the balls does not any longer admit of top-of-the-table play, one of the object balls is so situated that an in-off can be played in such a manner as to leave position for a drop cannon from the D, and thus with another stroke the player gets all the balls at the spot end of the table again. Indeed, when the position at the top of the table is no longer favourable for a continuance of top-of-the-table play the player often plays a stroke in such a way as to leave one of the balls in position for an in-off—in order that he may be able by means of two more strokes to regain the position which he has temporarily lost. The good amateur too—the man who regularly makes thirties and forties and occasionally much bigger breaks—constantly plays to leave a drop-cannon position from the D, firstly because he knows that by reason of his being able to place his ball anywhere in the D for the next stroke, the in-off from which position for a drop cannon may be obtained has seldom to be played with any very exact strength—nor by means of any very exact contact when the stroke is off a ball very near a pocket—in order to get the desired position, and secondly because although he is aware that getting good position at the top of the table by means of a drop cannon does not mean that he will be able to stay there, he knows that the drop cannon, if at all well played, will almost certainly leave him some good position or other—Stevenson himself cannot foretell the exact kind of position that will result from a well-played drop cannon—and that in this way he may be enabled to go on scoring, notwithstanding that he may not be able to remain at the top of the table for more than two or three strokes, and even though the stroke that has taken him there may possibly have to be followed by an in-off which takes him back again to the D.

When the cue ball can be placed in the D for a plain half-ball stroke a drop cannon is the easiest of strokes, just as a stroke, but as with other strokes there is a right and a wrong way of playing drop cannons, and the correct way of playing these strokes in varying positions will be fully discussed in the next chapter. It is, of course, quite impossible to give examples of every stroke by which position for a drop cannon may be obtained, but the ones which will be illustrated and discussed in this chapter will be typical of all those which are ordinarily employed by good players to obtain the desired position.

One fundamental rule governs correct play in relation to obtaining position for a half-ball cannon from the D, viz., the object ball from which the in-off is played should be given such direction or pace—or both—as will cause it to come to rest a long way from the other object ball.* The reason for this is two-fold,

* An exception to this rule occurs in certain positions wherein the in-off has to be played in such a manner as to leave position for a short drop cannon.

for firstly the strength of the stroke by which the in-off is made has not to be nearly so exact to leave a ball-to-ball cannon from the D with the object balls a considerable distance apart, as it has to be to leave the same kind of cannon with the object balls near each other, and secondly because although with the balls close together, and in position for an easy ball-to-ball cannon from the D, the cannon is just as simple a stroke as the half-ball cannon with the balls a long distance from each other, it is, generally speaking, far more difficult to retain good position when playing a long-distance cannon with the object balls not far apart, than it is when a considerable distance separates the balls.

Diagrams 765 and 766 illustrate this very clearly. In Diagram 765 the intersected line drawn from the object white indicates how this ball, as the result of the in-off, has come to rest only a short distance from the red. How little latitude there is for correct strength in such a stroke is proved by the fact that when the object white, after striking the side cushion, travels in the direction indicated by the intersected line the after-position will be very bad when it travels a few inches farther than shown on the diagram, for in this case, even though it may not actually cover the red, no easy stroke will be left. Should the ball not travel as far as indicated by the intersected line, the only stroke to play may be a screw cannon or a forcing stroke, and except with very good players the after-position from either stroke is always extremely doubtful. Even when the in-off illustrated on Diagram 765 causes the object white to travel the exact distance and in the exact direction indicated by the intersected line, with the result that an easy cannon is left for the next stroke, the position obtained is not a very good one, for with the object balls so close together only a very well-played cannon from the distance of the D can prevent loss of position.

Diagram 766 illustrates the correct way of playing the in-off in order to leave position for a drop cannon from the D. The object white is taken less full than in the stroke shown on Diagram 765, and thus instead of its crossing the table close to the billiard spot it travels down the table as well as across it. When correct strength is used the object white will travel from one side cushion to the other and then rebound some little distance from the second cushion. In the stroke illustrated on Diagram 766 the object white has come to rest—as the result of an actual stroke—16½ inches from the side cushion and 58 inches from the top cushion, and with this ball situated to these measurements the spotting

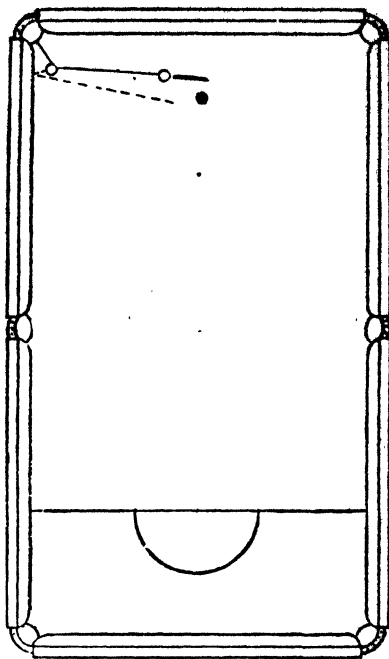


DIAGRAM 765.—An in-off from the white sending the object ball to the vicinity of the red. An unsound stroke. Diagram 766 illustrates the correct way of playing this in-off. Object white 3½ inches from the side cushion and 6½ inches from the top cushion. Cue ball 8½ inches from the top cushion and 25½ inches from the side cushion. Red ball on the spot.

for the drop cannon is close to the centre of the D line. Of course, it would be quite impossible to play the in-off illustrated on Diagram 766 several times and get exactly the same result twice, for even although the different strokes were perfectly played their strength would not be exactly the same, nor would the object ball always be given the same line of travel. Good drop-cannon position from the in-off shown on Diagram 766 does not, however, depend upon this in-off being played with very exact strength nor upon a very exact contact with the object white. Very good drop-cannon position may be left even though the object white takes the right side cushion a little higher up or considerably lower down than shown on Diagram 766, and the position may also be a very good one when the object white comes to rest at a greater or less distance from the side cushion than indicated by the intersected line on this diagram. The 23 inches of D line gives a very great amount of latitude as to where the object white may come to rest in order to leave position for an easy drop cannon. As already stated the object white's line of travel on Diagram 766, as indicated by the intersected line,

leaves a drop cannon from somewhere near the centre of the D line, but when the object white travels with a little less pace—though still with the same direction—and thus rebounds from the cushion a few inches short of the distance indicated by the intersected line a drop cannon from the D will still be on for the next stroke from a point on the D line not very far from its right end. When, on the other hand, the object white—as the result of the in-off shown on Diagram 766—travels several inches farther than indicated by the intersected line position for a drop cannon will still be left, though in this case the cue ball's placing for the stroke will be at or somewhere near the left end of the D line. Although when playing to leave a drop cannon as the result of the in-off illustrated on Diagram 766 no very exact strength is necessary, the strength of the stroke must be fairly good, otherwise bad position may easily result. Too much strength is a much better fault than too little strength, for when no drop cannon is left by reason of the in-off having been played with rather too much pace the object white will come to rest somewhere near the middle of the table and thus in position for a top-pocket in-off, whereas when the in-off is played with too little strength to leave a drop cannon the object white may come to rest somewhere near the side cushion. Often, too, when the in-off into the corner pocket is on by almost any kind of contact a careless stroke will leave the object ball close to the cushion just a few inches above the centre pocket. The player has

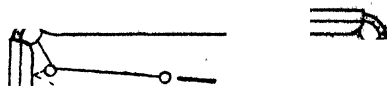


DIAGRAM 766.—An in-off to leave a drop-cannon position. All three balls situated as on Diagram 765. As the result of an actual stroke the object white came to rest $16\frac{1}{2}$ inches from the side cushion and 58 inches from the top cushion.

played the in-off with correct strength, but by reason of his having taken the object ball somewhat thinner than intended not sufficient of the cue ball's pace has been imparted to it, and consequently it travels short of its correct distance. In some variations of the position shown on Diagram 766 a careless stroke will result in the object ball travelling across the table and entering the centre pocket. When the white ball is lost in this manner its disappearance is the result of a poor stroke, and the player who laments his bad luck is simply cloaking or attempting to cloak his own bad play.

With the cue ball and the object white situated to the measurements given under Diagram 766 the in-off could, of course, be played in such a way as to leave position for another in-off into the same pocket. When, however, the cue ball is not very close to the object ball this in-off to leave position for another in-off is not nearly as simple as it may appear to be. A stroke that is a little too fast may bring the object ball too far from the side cushion to leave favourable position for an in-off from the D, and too slow a stroke will not bring the ball sufficiently away from the cushion to leave the desired position. Again, too thin a contact may easily cause the object ball to be badly placed for the next stroke.

Moreover, even when a stroke to leave another in-off is perfectly played, the resultant position does not compare favourably with a good drop-cannon position, because it is generally easier to obtain further good position as the result of a drop cannon than as the result of a top-pocket in-off from the white with the red ball on the spot.

Diagram 767 illustrates a variation of the position shown on Diagram 766. The white balls are placed exactly as before, but the red ball instead of being on the spot is a good way down the table and not very far from the side cushion. Here, instead of playing to send the object white down the table, it must be kept at the top of table, for as already explained a position for a simple ball-to-ball cannon from the D with the first object ball a long way from the D is, generally speaking, a much better one when the object balls are far apart than when they lie near each other. On Diagram 767 the intersected line indicates roughly the distance which the object white should travel when the in-off is played with good strength. When the ball travels the exact distance shown on the diagram the ensuing drop cannon will be from the centre or from a spot very close to the centre of the D line, and as a rule when playing an in-off to leave a drop cannon, the player should endeavour to so place the

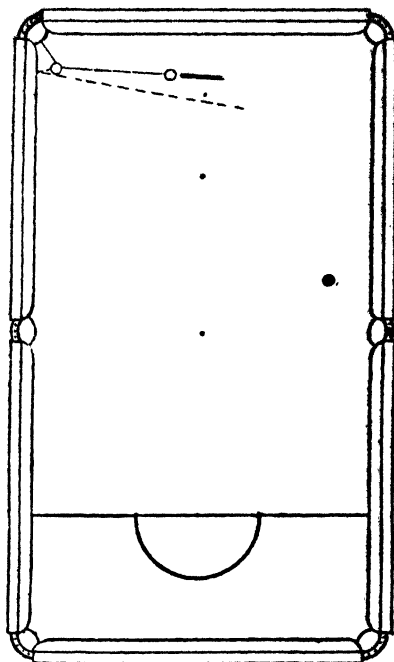


DIAGRAM 767.—An in-off to leave a drop-cannon position. Object white $3\frac{3}{4}$ inches from the side cushion and $6\frac{1}{2}$ inches from the top cushion. Cue ball $8\frac{1}{2}$ inches from the top cushion and $25\frac{1}{2}$ inches from the side cushion. Red ball 9 inches from the side cushion and 60 inches from the top cushion.

object ball that the ensuing cannon will be from somewhere near the centre of the D line, for in this way a moderate error of strength may be compensated for by playing the cannon from one side or other of the D, according to whether the in-off has been played with too little strength or with too much strength. For example, in the stroke illustrated on Diagram 767, should the object ball travel considerably farther than indicated by the intersected line, an ordinary ball-to-ball cannon may still be on from the left end of the D line, or from some point near this end, and conversely should the object ball travel considerably less distance than shown on the diagram an ordinary drop cannon may still be on from the right end of the D or from some point close to it. It will thus be seen that there is a large amount of latitude as to the strength with which the in-off must be played in order to leave the desired position. In fact, with the balls to the measurements given under Diagram 767 there is a margin of at least 15 inches between the shortest and longest distance which the object white may travel on the line shown on the diagram to leave position for an ordinary drop cannon from the D.

Diagrams 768 and 769 show an in-off into a top pocket and the wrong and the right way of playing the stroke to leave position for a cannon from the D. The position of the cue ball and of the object white is exactly the same on both diagrams and the in-off can be quite easily made by means of a thin stroke or a run-through. Diagram 768 shows the thin stroke, which if played with sufficient pace sends the object white to the vicinity of the red ball. This is the wrong way of playing the in-off, for although it is quite possible by means of this stroke to leave position for a very easy cannon from the D, a bad leave can also very easily result from this thin in-off. On Diagram 768 the intersected line indicates how position for a very simple cannon from the D may be left when the in-off is played with good strength. Good strength here, however, means very exact strength, for when the distance which the object white travels is only a few inches less than that indicated by the intersected line the subsequent cannon from the D will not be of that nature which is favourable for after-position, and when the object white travels a few inches farther than shown on Diagram 768 it may easily cover the red, and even without a cover occurring the next stroke from the D may still be an awkward one. A stroke which demands that the object ball be made to travel some considerable distance and which yet has to be played with very exact strength in order to leave



DIAGRAM 768.—An in-off from the white sending the object ball to the vicinity of the red. A very unsound stroke. The correct way of playing this in-off is shown on Diagram 769. Object white $2\frac{1}{2}$ inches from the top cushion and $3\frac{1}{2}$ inches from the side cushion. Cue ball $3\frac{1}{2}$ inches from the side cushion and 13 inches from the top cushion. Red ball on the spot.

after-position is always a very difficult one, and a stroke of this nature should always be avoided when good position can be gained by means of another, the strength of which has not to be nearly so exact.

Diagram 769 illustrates the correct way of playing the in-off. By means of a run-through stroke the object white is brought down the table, and thus the strength of the stroke and the direction in which the ball travels have not to be very exact, for when the object white is brought well down the table the length of the D line allows of a great amount of latitude as to where the ball must come to rest in order to leave position for an ordinary drop cannon from the D. On Diagram 769 the intersected line indicates the very good direction which has been given the

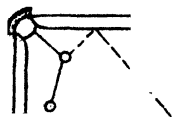


DIAGRAM 769.—An in-off, played as a run-through, to leave a drop-cannon position. All three balls situated as on Diagram 768.

object white, for the ensuing drop cannon would be from about the centre of the D line. When, however, as the result of this run-through in-off the object white travels to the right or to the left of the path indicated by the intersected line an ordinary drop cannon will still be on from one side or the other of the D, provided that the ball does not travel very wide of this line. Also the object white may travel farther than, or not so far as shown on the diagram and still leave position for a simple drop cannon from the D.

Diagram 770 shows a variation of the in-off illustrated on Diagram 769. Here, the object white cannot be brought down the left side of the table, as the position does not admit of the in-off being made by means of a run-through stroke. A half-ball stroke will, however, cause the object white to travel across and down the table in the manner indicated by



DIAGRAM 770.—An in-off to leave a drop-cannon position. Object white $5\frac{1}{2}$ inches from the top cushion and $6\frac{1}{2}$ inches from the side cushion. Cue ball $4\frac{1}{2}$ inches from the side cushion and $17\frac{1}{2}$ inches from the top cushion. Red ball on the spot.

the intersected line on Diagram 770, and thus a good-strength stroke will leave position for a drop cannon from the D. Good strength here does not, however, mean very exact strength. When the object ball travels as far as indicated by the intersected line the subsequent drop cannon would be from somewhere near the centre of the D line. When it travels a little farther than shown on the diagram a drop cannon will be on from the right side of the D, and from the left side when it does not travel the distance indicated on the diagram. The stroke is a better one when played with too little strength than with too much strength, for in the latter case the ball may come to rest near the side cushion and may sometimes even enter the centre pocket, whereas when the ball does not travel nearly far enough to leave position for a drop cannon it may come to rest in good position for a top-pocket in-off. For example, if in the stroke illustrated on Diagram 770 the object ball, travelling along the path indicated by the intersected line, should come to rest in the vicinity of the pyramid spot, good position for an in-off into the right top pocket would be left for the next stroke. The in-off shown on Diagram 770 could also be played in such a way as to leave the object white close to the red, but for the reasons already given, such a stroke is a very unsound one.

Diagram 771 shows the white in position for an easy centre-pocket in-off from the D. The direction given to the object ball will, of course, depend upon the kind of contact which the cue ball makes with it, and it is quite easy to give it totally different lines of travel by varying the contact from considerably less than half-ball to considerably fuller than half-ball. With the red situated as shown on Diagram 771 position for a drop cannon can easily be left as the result of an in-off from the white made by means of a stroke which is about half-ball or a shade thinner than half-ball. When the in-off is played with good strength the object white will come to rest close to the top cushion and thus the object balls will be at the best possible distance from each other for the subsequent drop cannon from the D. When the object white travels in the direction indicated by the intersected line on Diagram 771 the drop cannon will be from somewhere near the centre of the D line, and thus a cannon by a plain half-ball stroke will still be on from some part of the D, even though the ball travels some little distance to the right or left of this intersected line.

Diagram 772 shows the object white in exactly the same position as on Diagram 771, but the location of the red is a very different one. Here, in order to leave position for a drop cannon from the D the in-off into the centre pocket

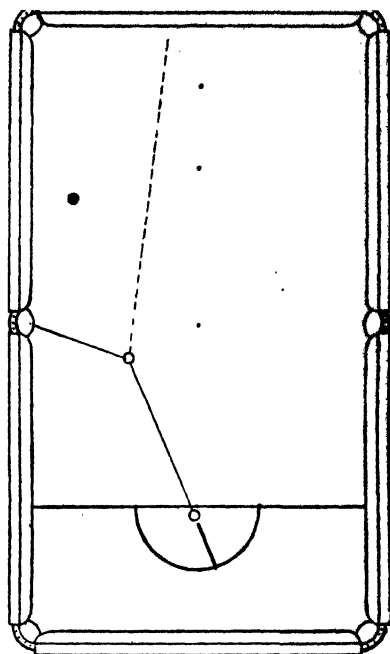


DIAGRAM 771.—A centre-pocket in-off to leave a drop-cannon position. Object white 21 inches from the side cushion and 56 inches from the baulk cushion. Red ball 8 inches from the side cushion and 43 inches from the top cushion.

must be played with sufficient pace to cause the object ball to travel well down the table after striking the top cushion. It is not necessary that the object white travels with any exact direction in order to leave position for the drop cannon, for provided that it comes to rest not very far from the central line of the table, and provided also that it travels well down the table, the desired position will be on from some part of the D. On Diagram 772 the intersected line shows that the white has been taken a little thinner than in the stroke illustrated on Diagram 771, but exactly the same kind of stroke—as regards contact—as the one employed for the in-off on Diagram 761 would have given the object ball on Diagram 762 equally good direction.

Diagram 773 shows the object white

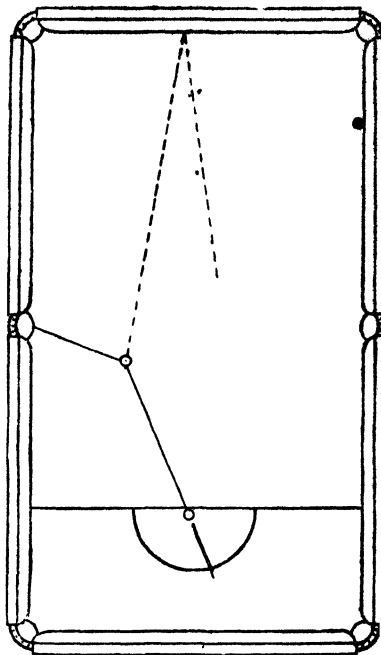


DIAGRAM 772.—A centre-pocket in-off to leave a drop-cannon position. Object white 21 inches from the side cushion and 56 inches from the baulk cushion. Red ball touching the side cushion and 22 inches from the top cushion.

well situated for a centre-pocket in-off from the D. By means of a thinner than half-ball stroke the object white can be directed to the centre of the top cushion. Such a stroke—with the balls to the measurements given under the diagram—will leave perfect drop-cannon position when the strength is so gauged that the object ball comes to rest close to the cushion, or at no great distance from it.

Diagrams 774 and 775 illustrate two very different ways of playing a centre-pocket in-off. The object white is in exactly the same position in both cases, but with the red on the spot, as on Diagram 774, the in-off has to be made by a considerably fuller than half-ball stroke in order to leave position for a drop cannon from the D. When the

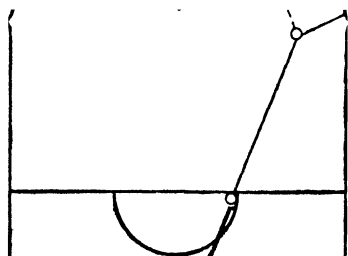
DIAGRAM 773.—A centre-pocket in-off to leave a drop-cannon position. Object white 23 inches from the side cushion and 57 inches from the baulk cushion. Red ball 17 inches from the side cushion and 58 inches from the top cushion.

object white is given the direction indicated by the intersected line on Diagram 774, or one very similar to this, a considerable amount of latitude exists as to what is correct strength for the stroke. For example, if the object white, travelling on the intersected line on Diagram 774, were to come to rest a foot or so higher up the table, or if it were to travel several inches farther down the table than the termination of this line, position would still be left for a simple drop cannon. When this in-off to leave position for a drop cannon is played with considerably too much strength, with the result that the object white instead of coming to rest above the centre pocket—as shown on Diagram 774—travels a short distance past the pocket, position will be left for another in-off.

D



DIAGRAM 774.—A centre-pocket in-off to leave a drop-cannon position. Object white 10 inches from the side cushion and 64 inches from the baulk cushion. Red ball on the spot.



leave a drop-cannon position. Object white situated exactly as on Diagram 774. Red ball 12 inches from the side cushion and 57 inches from the top cushion.

Diagram 775 shows the object white in exactly the same position as on Diagram 774. Owing, however, to the altered location of the red ball, position for a drop cannon from the D can only be gained by means of a thinner than half-ball in-off. The intersected line on Diagram 775 indicates the direction in which the object white should be made to travel, and a good-strength stroke will cause it to come to rest close to the top cushion. It is, of course, not necessary that the object white should travel exactly in the direction shown on the diagram in order that position may be left for a drop cannon. Provided that its line of travel is not very different from that indicated by the intersected line the in-off will position for a drop cannon from some spot or other in the D.

Diagram 776 illustrates a very pretty stroke often played by good players. The in-off is here made by quite a thin stroke played with little more strength than is necessary to take the cue ball to the pocket. This thin, gentle stroke cuts the object ball away from the side of the table and dribbles it a short distance up the table—as indicated by the intersected line on the diagram. In this way perfect position for a drop cannon is left for the next stroke.

Diagram 777 again illustrates how position for a drop cannon may be obtained as the result of a thinner than half-ball centre-pocket in-off played without much pace. This in-off is not quite as gentle a stroke as the one illustrated on Diagram 776, for the object ball has to travel a considerable distance before a drop cannon can be on

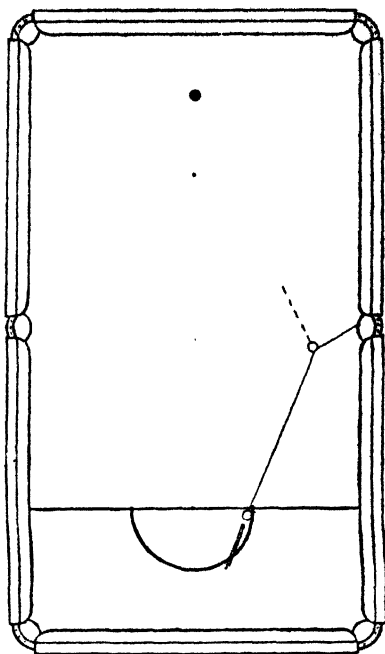
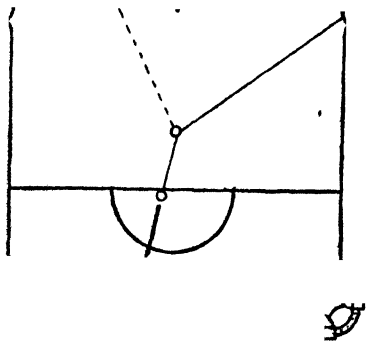


DIAGRAM 776.—A gentle thin centre-pocket in-off to leave a drop-cannon position. Object white 7 inches from the side cushion and $6\frac{1}{2}$ inches from the baulk cushion. Red ball on the spot.



777.—A slow thin centre-pocket in-off to leave a drop-cannon position.

and 41 inches from the baulk cushion. Red ball on the spot.

from the D. Nevertheless, the cue ball must travel to the pocket without much pace, otherwise the object white will travel too far.

Diagram 778 illustrates a position which is typical of others which often occur. Here, by means of a considerably fuller than half-ball stroke the object white may be dribbled to the vicinity of the red ball—as indicated by the intersected line on the diagram—and in this way position for a simple cannon from the D may be left for the next stroke. When, however, this in-off to leave the object white close to the red is played with a little too much strength the after-position will often be very bad, owing to the object white travelling too

white up to the red may not appear to

be at all difficult, but strokes which have to be played with very exact strength are never very easy when the object ball is a considerable distance from the cue ball.

Diagram 779 shows the object balls situated exactly as on Diagram 778, but illustrates a better positional stroke. Here, the in-off is made by a thin stroke which cuts the white well past the red, as indicated by the intersected line. A good-strength stroke will cause the ball to come to rest close to the top cushion, and thus if the direction in which the ball travels is at all good position will be left for a simple drop cannon from the D. The after-position shown on Diagram 779, which is a drop cannon from somewhere near the centre of the D, is a much better one than that indicated on Diagram 778, notwithstanding

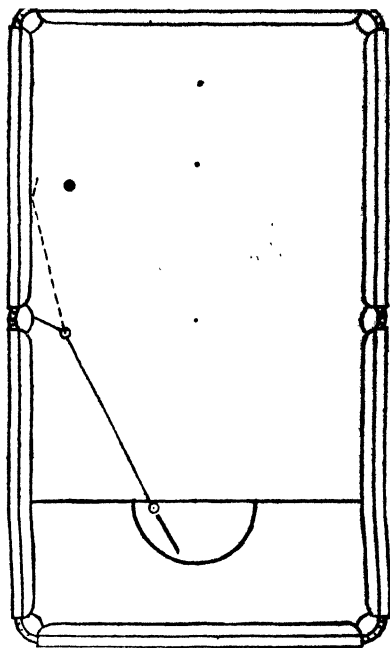


DIAGRAM 778.—A centre-pocket in-off sending the object white up to the red. A better stroke is shown on Diagram 779. Object white $66\frac{1}{2}$ inches from the baulk cushion and $5\frac{1}{2}$ inches from the nearest point on the side cushion. Red ball 6 inches from the side cushion and 37 inches from the top cushion.

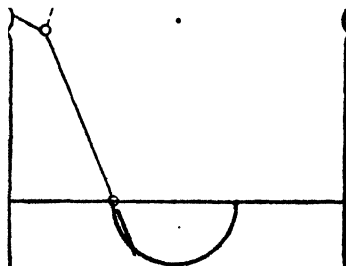


DIAGRAM 779.—A thin centre-pocket in-off cutting the white past the red to leave a drop-cannon position. A better positional stroke than the one illustrated on Diagram 778. Object balls situated as on Diagram 778.

ing that the cannon left by the in-off on this diagram is such a simple stroke.

Diagram 780 further illustrates how position for a drop cannon from the D may be obtained by means of a thin in-off played with good strength. The intersected line on the diagram indicates the direction which the object ball should be given, as well as the distance it should travel. Exact strength is not, however, necessary in order to leave position for a drop cannon from the D. In this stroke, too, the proximity of the cue ball to the object ball makes it far less difficult to send the object ball a desired distance than would be were the balls a considerable from each other. The in-off

Diagram 780 would also leave position for a drop cannon with the red ball at the other side of the table some distance from the side cushion and above the centre pocket.

Diagram 781 illustrates a variation of the stroke shown on Diagram 780. The cue ball and the object white are situated exactly as on the last diagram, but with the red ball so much higher up the table the in-off must be played with much less pace, though in the same way as regards contact with the object ball, in order to leave position for a drop cannon from the D. The stroke from the D which here follows a correctly-played in-off is known as a short drop cannon—owing to the object balls being at no great distance from each other—in contradistinction from the ordinary long drop cannon, so termed on account

DIAGRAM 780.—A thin in-off to leave a drop-cannon position. Object white $3\frac{1}{2}$ inches from the top cushion and 4 inches from the side cushion. Cue ball $3\frac{1}{2}$ inches from the side cushion and $9\frac{1}{2}$ inches from the top cushion. Red ball 10 inches from the side cushion and 56 inches from the top cushion.

D

of the object balls in this cannon being a long distance apart. When playing an in-off to leave a short drop cannon the strength of the stroke has to be more accurately gauged than when playing to leave a long drop cannon, for the width of the D affords more latitude as to the strength at which an in-off to leave a drop cannon must be played when the object ball has to be placed a long way from the other ball than when it has to be placed comparatively near it. In the stroke shown on Diagram 781 there is, nevertheless, a very fair amount of latitude as to the strength at which it must be played in order to leave position for a drop cannon from some part or other of the D, and as the cue ball is very near the object ball, and

781.—A thin in-off to leave a short drop cannon. Cue ball and object white as on Diagram 780. Red ball $2\frac{1}{2}$ inches from the side cushion and 16 inches from the top cushion.

as in addition to this the stroke has to be played without much pace this in-off to leave position for a drop cannon from the D is an easy one. When the object white travels as indicated by the intersected line on Diagram 781 the ensuing cannon will be from somewhere near the centre of the D line.

Diagram 782 shows a position that, with slight variations which do not affect the stroke to be played, is of common occurrence. The in-off cannot very well be missed, but the stroke must be played with sufficient strength to send the ball down the table about as far as the termination of the intersected line on the diagram, and more or less in the direction indicated by this line. In order to give the object ball the correct direction the contact must be

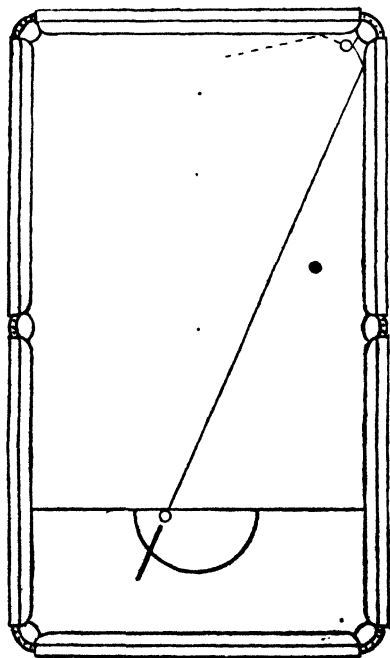


DIAGRAM 783.—A cushion in-off to leave a drop-cannon position. Object white 2 inches from the nearest point on the top cushion and $2\frac{1}{2}$ inches from the nearest point on the side cushion. Red ball 10 inches from the side cushion and 58 inches from the top cushion.



DIAGRAM 782.—An in-off to leave a drop-cannon position. Object white 4 inches from the top cushion and 6 inches from the side cushion. Cue ball 1 inch from the top cushion and 13 inches from the nearest point on the side cushion. Red ball on the spot.

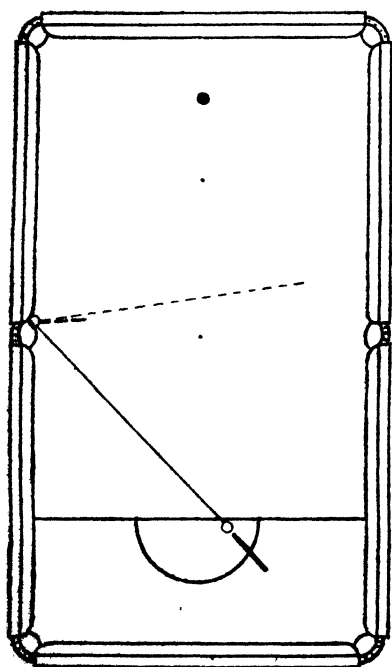
somewhat thinner than half-ball. In this particular stroke too much pace is better than too little pace, for should the object white, though travelling with correct direction, not come far enough down to leave a drop cannon, the only stroke to play will be a cannon off the top cushion, whereas should it travel too far down the table to leave a drop cannon, good position for a centre-pocket in-off will be left instead, unless, of course, the ball travels a long way past the pocket as the result of a very bad stroke indeed.

Diagram 783 illustrates how position for an ordinary drop cannon from the D may often be gained by the agency of a cushion in-off. With the object white situated as shown on the diagram an in-off made by hitting the side cushion a little in advance of the ball is

an easy enough stroke, but as this cushion in-off may be made by various kinds of contacts, ranging from quite a thin one to a very full one, the stroke requires good handling to leave position for a long drop cannon from the D. The intersected line on the diagram gives an idea of the distance which the object ball travels and also of the direction of its line of travel when the stroke is correctly played. In order that the object white may travel in the direction indicated by the intersected line, it must necessarily be taken much more thinly than half-ball, and this being so the stroke must be played with a moderate amount of pace, otherwise, by reason of its being taken thinly, the object white will not travel far enough to leave an ordinary drop cannon even from the left end of the D line. When the cue ball takes the object white a little fuller than indicated by the intersected line on Diagram 793 the top cushion will be taken a little nearer the pocket, and consequently the ball will not be cut quite so much across the table, but provided that it comes to rest in the vicinity of the spot or not very much below it, position for a drop cannon from the D will be left to continue with. With the red ball in the same position—as regards its distance from the side and top cushions—on the other side of the table, position for a drop cannon can be left by the same kind of stroke as the one shown on the

diagram, with the exception that just a little more pace is required in order that the object ball may be made to travel to the central line of the table or slightly beyond it.

Diagram 784 shows the object white on the upper angle of a centre pocket and partly overhanging the pocket. Owing to the ball being so close to the pocket, an in-off from the D causes it to travel very nearly straight across the table instead of up the table, and thus when the red ball is at the top end of the table position for a drop cannon can always be obtained by means of a good-strength stroke. On Diagram 784 the red ball is on the spot, and thus drop-cannon position will be obtained when the object white travels only a short distance from the angle—as indicated by the thick intersected line on the diagram—or when it travels across the table to within about a foot or eighteen inches of the side cushion, as indicated by the thin intersected line on the diagram. The slow stroke is the one which good players make use of, but it is not quite so easy to get position for the drop cannon by this slow stroke as it may appear to be. A little too much pace, and the object white will come to rest too near the central line of the table to leave the position



784.—A centre-pocket in-off to leave a drop-cannon position. The thick intersected line indicates how good position may be left as the result of a gentle stroke, and the thin intersected line how equally good position may result from a faster stroke. Object white on the upper angle and partly overhanging the pocket. Red

player, though playing to bring the ball only a short distance away from the angle, causes it to travel nearly across the table, and though in this way he may still have an easy drop-cannon position for the next stroke, it is not the one for which he played, and consequently the position is really a lucky one. When as the result of the in-off the object white comes to rest in the neighbourhood of the central line of the table, an in-off into a top pocket will always be on, but a top-pocket in-off with the object ball only a little above the centre pockets is not nearly as inviting a stroke as an ordinary drop cannon. When the red instead of being on the spot is well to the side of the table and also high up the table, the in-off illustrated on the diagram will leave position for a drop cannon, provided that the strength of the stroke is so gauged that the object white travels about half-way across the table.

Diagram 785 illustrates a variation of the stroke shown on Diagram 784. Here, the white ball, though still on the upper angle of a centre pocket, is about half a ball farther from the pocket than on Diagram 784, and its position is such that an in-off from the D causes it to travel up the table instead of across it. The direction in which it will travel from the angle depends on the kind of contact which the cue ball makes with it, and the intersected lines on the diagram indicate two different lines of travel, one of which has resulted from a somewhat thinner than half-ball stroke, and the other from a rather fuller than half-ball stroke. Provided, however, that the in-off is played with good strength position for a drop cannon will always be left for the next stroke, and thus in this particular in-off—and also in the in-off illustrated on Diagram 784—the strength of the stroke is more important than the kind of contact which the cue ball makes with the object ball. This is, of course, assuming that the object white is taken not much fuller nor much thinner than half-ball.

Diagram 786 shows a position which with variations which do not affect the stroke to be played is of fairly frequent occurrence. Here, the only stroke to be played is a very thin in-off from the red, and this in-off can be played at any pace ranging from quite a gentle stroke to a fast stroke. The pace at which this in-off should be played depends on the location of the object white, provided that this ball is so situated that position for a drop cannon may easily be obtained as the result of a correctly-played in-off from the red. With the balls to the measurements given under the diagram an easy drop cannon be on from the D were the cue ball in hand instead of on the table close to red. This being the case, the in-off from the red must be played without

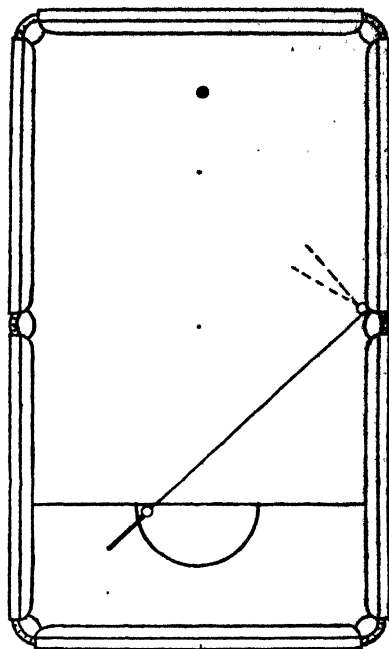


DIAGRAM 785.—A centre-pocket in-off to leave a drop-cannon position. Object white on the upper angle, but about half a ball farther from the pocket than on Diagram 784. Red ball on the spot.

THE STROKES OF THE GAME.

pace, for in this way the object ball will only travel a short distance, and thus position will be left for a drop cannon from the D. With the object white eight or nine inches farther from the side cushion than shown on the diagram, but at the same distance from the top cushion, this thin in-off from the red would have to be played with plenty of pace in order to leave position for a drop cannon to continue with.

Diagram 787 illustrates another very thin in-off to leave position for a drop cannon from the D. The two strokes, however, differ somewhat in their nature, for whereas in the in-off shown on Diagram 786 position is left for a drop cannon from the D, no matter whether the object ball is made to travel only an inch or two or right to

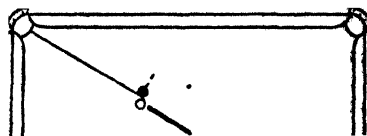
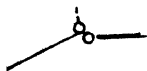


DIAGRAM 786.—A very thin top-pocket in-off to leave a drop-cannon position. Red ball $12\frac{1}{2}$ inches from the top cushion and 22 inches from the side cushion. Object white 10 inches from the side cushion and 53 inches from the top cushion. Cue ball close to the red.



—A very thin centre-pocket in-off to leave a drop-cannon position. Object white 18 inches from the side cushion and 61 inches from the top cushion. Red ball on the spot. Cue ball close to the object white.

the top cushion, in the in-off illustrated on Diagram 787 position will not be left for an ordinary drop cannon from the D should the object ball be made to travel more than a few inches.

Diagram 788 shows position for a somewhat thin in-off from the red on the spot. Here again, a stroke played with very little pace will leave position for a drop cannon from the D. No exact strength is necessary, for the in-off will leave a drop-cannon position whether the red ball only travels as far as the cushion or whether it rebounds as far down the table as the spot or even some little distance past the spot.

Diagram 789 illustrates an easy run-through in-off into a centre pocket. Owing to the cue ball being so near the

object ball it is not difficult to play the in-off with correct strength to leave position for a drop cannon from the D, as owing to the width of the D correct strength does not mean very exact strength. By varying the strength of the stroke this run-through in-off can be played to leave position for a drop cannon with the red in various other positions in addition to the one shown on the diagram, provided that it is high up the table. With the red ball say six inches to the left of the spot and at the same distance from the top cushion as when on the spot, a slower stroke than the one illustrated on Diagram 789 would have to be used in order not to bring the object ball quite so far from the side cushion as indicated by the intersected line on the diagram; and were the red very considerably to the right of the spot and also higher up the table—say, for example, twelve or fifteen

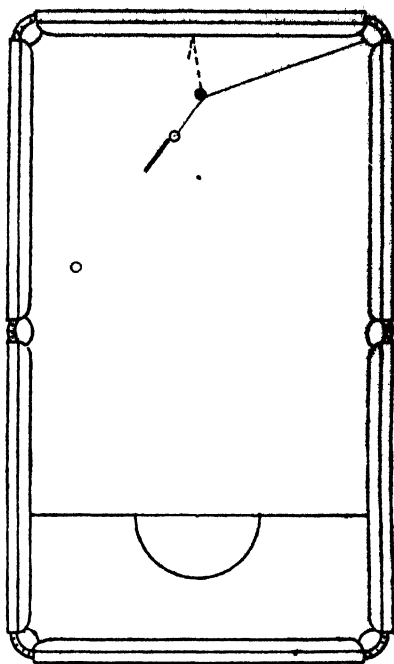


DIAGRAM 788.—An in-off from the red on the spot to leave a drop-cannon position. Cue ball $21\frac{1}{2}$ inches from the top cushion and $27\frac{1}{2}$ inches from the side cushion. Object white 10 inches from the side cushion and 60 inches from the top cushion.

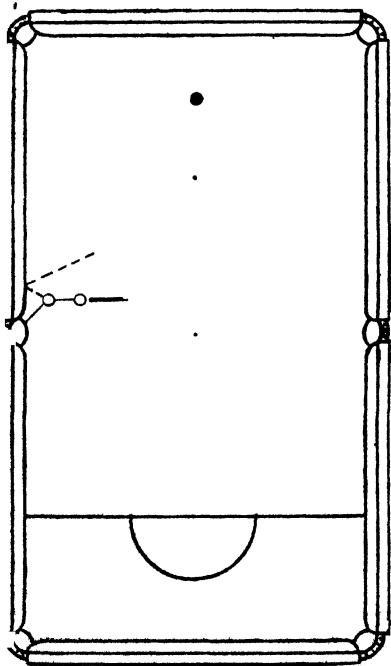


DIAGRAM 789.—A run-through in-off to leave a drop-cannon position.

inches from the right side cushion and close to the top cushion—the object white would have to be brought farther out into the table than on Diagram 789 in order to leave position for a drop cannon.

Diagram 790 illustrates a placing of the balls which affords a choice between an easy ball-to-ball cannon or an equally simple in-off. In this position, however, the cannon is a very poor stroke to play, for although it is quite possible to send the red to the vicinity of the corner pocket, good strength and great accuracy of contact with the red is necessary to ensure good after-position as the result of the cannon. On the other hand, the half-ball in-off shown on the diagram, if played with anything like good strength, leaves

position for an ordinary drop cannon from the D. The intersected line on the diagram indicates the direction in which the object ball travels as the result of a half-ball in-off and also about the distance which it should run when the stroke is played with good strength. In the position shown on Diagram 790 a cannon is a half-ball stroke, but by slightly varying the location of the red ball a cannon may no longer be possible by this stroke, though an in-off to leave a drop cannon could still be played in the manner illustrated on the diagram.

Diagram 791 illustrates a variation of the stroke—to leave a drop-cannon position—shown on Diagram 790. Owing to the object white being so near the pocket the in-off can be made

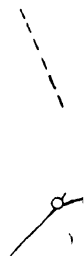


DIAGRAM 790.—A centre-pocket in-off to leave a drop-cannon position. Object white $12\frac{1}{2}$ inches from the side cushion and 63 inches from the top cushion. Cue ball 27 inches from the pocket and on a line drawn from one centre pocket to the other. Red ball $9\frac{1}{2}$ inches from the side cushion and 53 inches from the top cushion.

by almost any kind of contact, provided that the cue ball is spotted in a suitable place for the stroke. By spotting as shown on the diagram and playing the in-off as a run-through stroke the object white can be made to strike the side cushion only a short distance above the pocket, and thus it can be given a line of travel more or less like the one indicated by the intersected line on the diagram, and in this way, provided that the in-off has been played with good strength—and good strength here does not mean very exact strength—position will be left for a drop cannon from the D. In the position shown on Diagram 791 should the in-off be played with a little too much strength to leave a drop cannon, position will be left for a

DIAGRAM 791.—A centre-pocket in-off to leave a drop-cannon position. Object white on the line between the centre pockets and five inches from the fall of the slate. Red ball 13 inches from the side cushion and 60 inches from the top cushion.

top-pocket in-off, provided that the object ball's line of travel is at all like the one indicated on the diagram.

Diagram 792 shows a placing of the object balls which, from the D, admits of either a cannon or an in-off being played. Both are easy strokes, but if the balls are set up to the measurements given under the diagram it will be found that the cannon is a screw, and therefore can only be played as a strong stroke, whereas the in-off from the white can be played at medium pace. If, however, this in-off be played as a half-ball stroke, a true contact will give the object ball a line of travel which will approximate very closely to that indicated by the intersected line on the diagram, and consequently the ball will travel with bad direction. Should it travel the distance indicated on the diagram, or even considerably less than

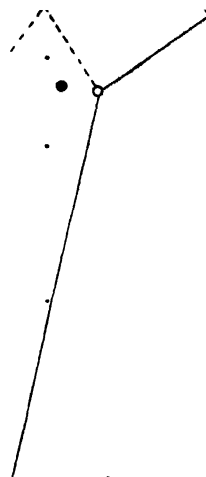


DIAGRAM 792.—A top-pocket in-off by means of a half-ball stroke. This stroke does not leave a drop-cannon position. The correct way of playing the in-off is illustrated on Diagram 793. Object white 24 inches from the side cushion and $22\frac{1}{2}$ inches from the top cushion. Red ball $20\frac{1}{2}$ inches from the top cushion and 31 inches from the side cushion.

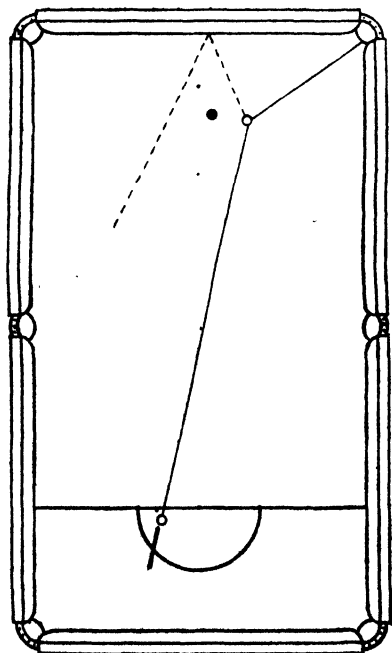


DIAGRAM 793.—A top-pocket in-off, by means of a somewhat fuller than half-ball stroke, to leave a drop-cannon position. Object balls as on Diagram 792.

this, all that will be left for the next stroke will be a cannon off the top cushion, and should it travel farther than shown on the diagram and come to rest close to the side cushion the after-position cannot be a good one. With sufficient strength the object white can, of course, be brought far enough down the table to leave position for a centre-pocket in-off, but although such a stroke may not appear to be a difficult one, it is one that requires handling very well, as it is very easy to play it with too much pace

of dealing with this position is to make the in-off a partial run-through by taking the

object white just a little fuller than half-ball. This method of playing the in-off—illustrated on Diagram 793—does not make the stroke a difficult one, even though it causes it to be a little less simple than the plain half-ball stroke. The fuller contact with the object white will give it a line of travel more or less as indicated by the intersected line on Diagram 793, and in this way, when the strength of the stroke is at all good, perfect position may be left for a drop cannon from the D.

Diagram 794 shows position for an easy in-off from the white. As the red is badly placed the in-off should be played in such a manner that position may be left for a drop cannon from the D. A slow half-ball stroke played with plenty of drag will insure this. If, however, the stroke be played with

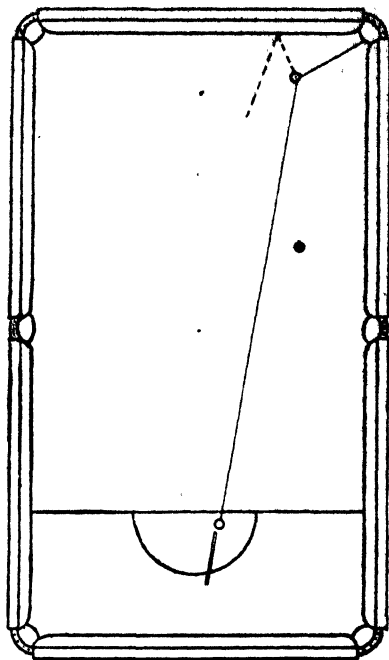
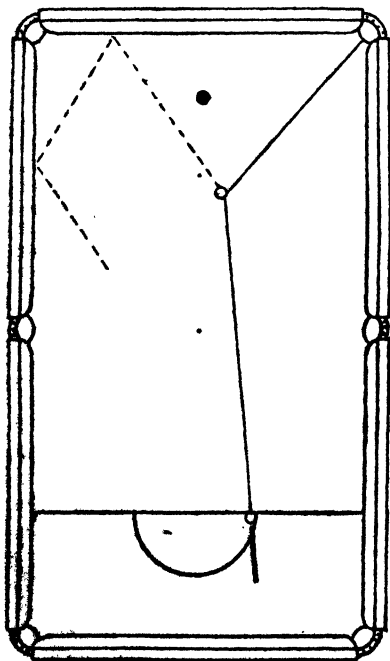


DIAGRAM 794.—A top-pocket in-off—played with plenty of drag—to leave a drop-cannon position. Object white $10\frac{1}{2}$ inches from the top cushion and $13\frac{1}{2}$ inches from the side cushion. Red ball 14 inches from the side cushion and 55 inches from the top cushion.



795.—A top-pocket in-off to

leave a drop-cannon position. Object white 20 inches from the side cushion and 41 inches from the top cushion. Red ball on the spot.

sufficient pace to cause the object white to travel down the table considerably farther than the termination of the intersected line on the diagram, no drop cannon will be on for the next stroke. In this event, however, the object white will—provided its line of travel is at all like the one shown on the diagram—come to rest in position for a top-pocket in-off.

Diagram 795 illustrates a position which is typical of constantly-occurring positions. The in-off from the white is just an ordinary top-pocket in-off, and the stroke can be played in such a way as to leave position for another in-

considerably less strength than is required to bring the object white far enough

down the table for a centre-pocket in-off from the D, position may be left for a drop cannon instead. The stroke to leave a drop cannon is shown on the diagram. No very exact strength is necessary, for provided that the object white's path at all approximates to the line of travel indicated by the intersected line on the diagram, position for a drop cannon will be left, notwithstanding that the ball may travel a little farther than, or not quite so far as, illustrated on the diagram. In the event of its travelling a little too far to leave a drop cannon, position will be left for an in-off into the right top pocket, and should it travel some little distance past the centre pockets it will enter the zone for centre-pocket in-offs. The stroke that leaves position for a drop cannon is, however, a better one than that which leaves position for another in-off. In fact, it seldom pays to try to continue scoring off the white ball when position can be just as easily obtained for a drop cannon.

Diagram 796 illustrates a position which, with variations which do not affect the stroke to be played, is of frequent occurrence. If this position is set up on the table to the measurements given under the diagram it will be seen that a centre-pocket in-off from the white is not on by means of an ordinary half-ball stroke, and that the only stroke to play is the long top-pocket in-off shown on the diagram. Position for a centre-pocket in-off can be obtained from this top-pocket in-off when sufficient strength is used to cause the object ball to travel right round the upper half of the table. An alternative way of playing this in-off is to leave position for a drop cannon, as illustrated on the diagram. Nice strength is required for this stroke, but a drop-cannon position will be left even though the object ball travels a little farther than, or stops a little short of the termination of the intersected line on the diagram.

Diagram 797 illustrates a modification of the position shown on Diagram 796. Here, playing from the D, there is a choice of two strokes, viz., a long top-pocket in-off or a ball-to-ball cannon. The cannon is by far the easier of the two strokes; in fact, by spotting for a half-ball stroke it cannot well be missed. The long in-off, on the other hand, whilst not a difficult stroke for any fair player, demands accurate striking, owing to the object ball being so low down the table, and is consequently much less simple than the ball-to-ball cannon. The good player, however, never for a moment hesitates between the cannon and the in-off, for the after-position from the cannon is always more or less obscure and generally bad, whereas that resulting from the in-off is clearly defined and depends upon the strength used for the stroke. The intersected

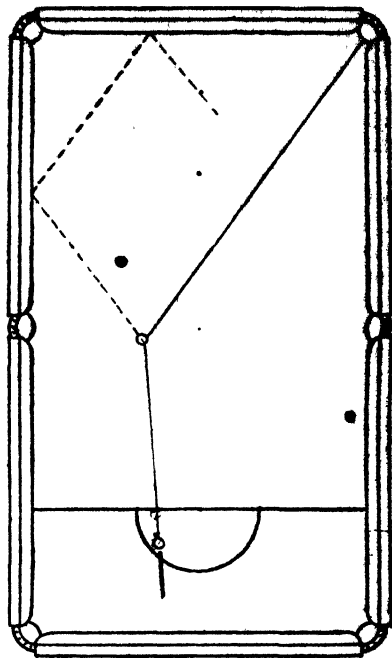


DIAGRAM 796.—A long top-pocket in-off to leave a drop-cannon position. Object white 22½ inches from the side cushion and 66 inches from the baulk cushion. Red ball 17 inches from the side cushion and 53 inches from the top cushion.

line on the diagram indicates how position may be left for a drop cannon. When the in-off is played with a little too much pace to leave position for a drop cannon, position may be left for a top-pocket in-off instead.

Diagram 798 illustrates an in-off played to leave a short drop cannon. This in-off is a very simple stroke just as a stroke, but in order to leave correct position the red has to be taken considerably fuller than half-ball, and in addition to this the stroke has to be played with nice strength. It is just because this in-off is so simple that bad position so often results from it. Owing to the red ball being so near the pocket the in-off can be made by various kinds of contacts ranging from considerably

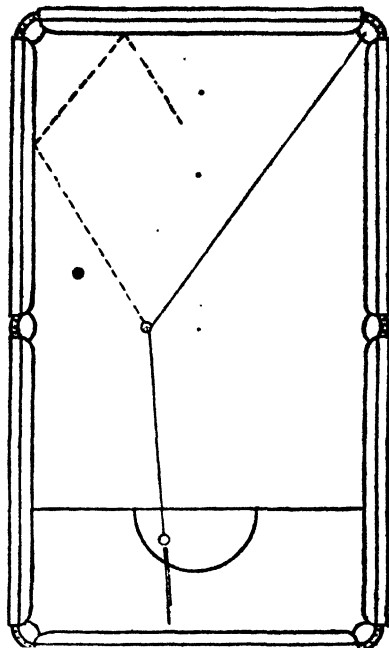


DIAGRAM 797.—A long top-pocket in-off to leave a drop-cannon position. An easy cannon is also on from the D, but the position which will result from the cannon is obscure. Object white on the line between the centre pockets and 24 inches from the left one. Red ball $8\frac{1}{2}$ inches from the side cushion and 59 inches from the top cushion.

DIAGRAM 798.—An in-off to leave position for a short drop cannon. Red ball 2 inches from the top cushion and $4\frac{1}{2}$ inches from the side cushion. Cue ball $5\frac{1}{2}$ inches from the side cushion and 18 inches from the top cushion. Object white 3 inches from the side and 18 inches from the side cushion.

thinner than half-ball to considerably fuller than half-ball ones, but position for the short drop cannon will not be left unless the object ball is taken considerably fuller than half-ball. Owing to the cue ball being only a short distance from the red it is not at all difficult to take the object ball correctly, but a careless stroke may easily mean indifferent if not bad after-position. A thinner than half-ball stroke or even a half-ball stroke will cause the red ball to travel considerably to the right of the path indicated by the intersected line on Diagram 798, and if the stroke, although faulty as regards contact with the red, has been played correctly as regards the strength

required to leave position for a short drop cannon, the after-position will only permit of a cannon off the side cushion.

Diagram 799 shows the object balls in exactly the same position as on Diagram 798. Playing from the distance of the D a stroke to leave position for a short drop cannon is a very different one from that illustrated on Diagram 798. Plenty of drag should be used for the stroke, for drag not only checks the speed of the cue ball, but also, whilst it lasts, ensures its true running. Even when this in-off is played with drag there is, nevertheless, always a possibility of the object ball not being taken sufficiently full to leave the desired position. The intersected line on the diagram indicates the bad direction which is so often given the object ball, even by good players, when playing this long-distance in-off to leave position for a short drop cannon. Playing from the D, with the object balls situated as on Diagram 799, it is

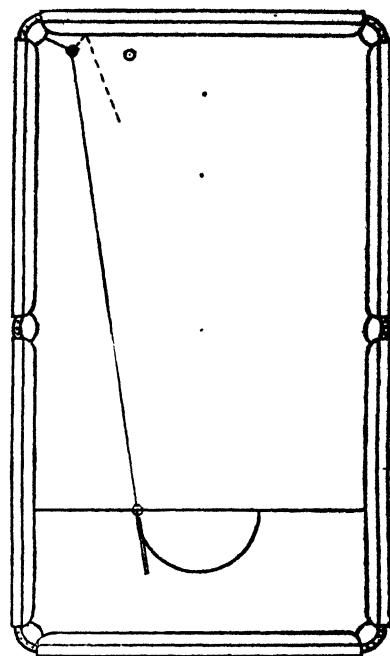


DIAGRAM 799.—A top-pocket in-off. The intersected line indicates the bad direction which is often given the object ball—by reason of a contact not sufficiently full—when playing from the distance of the D to leave a drop-cannon position, after the manner illustrated on Diagram 798.

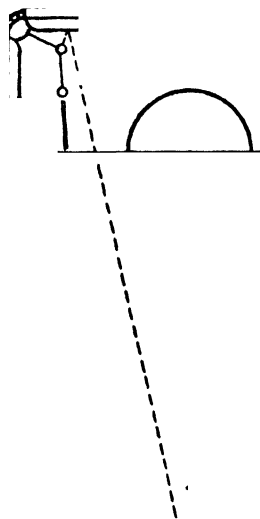


DIAGRAM 800.—A baulk-pocket in-off to leave a drop-cannon position.

safer to play the in-off with sufficient pace to bring the red far enough down the table to leave position for a top-pocket in-off, or even for a centre-pocket in-off, and a half-ball stroke can then be used, as such a stroke will result in the red ball travelling with good direction.

In the examples already given of in-offs to leave position for a drop cannon from the D, the in-off has always been into either a centre pocket or a top pocket. Position for a drop cannon can, however, often be obtained by means of an in-off into a baulk pocket. A typical example of such a stroke is illustrated on Diagram 800. The in-off is here quite a simple stroke, but the object ball must be taken a little fuller than half-ball in order that it may be given a good line of travel.

With the red ball situated as shown on the diagram the direction which should be given to the object white and the distance which it should travel are both indicated by the intersected line.

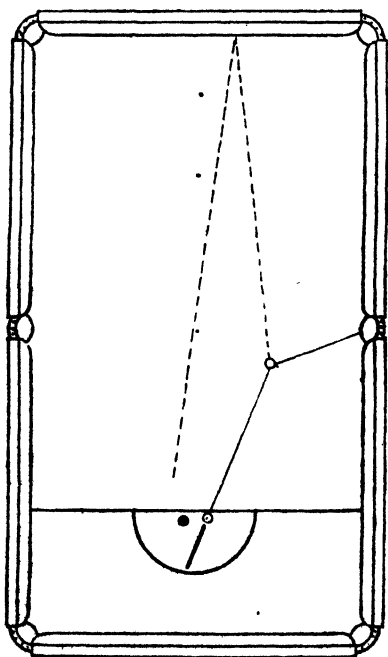
It often happens that one ball is in some very safe place, and that although the other ball is well situated for an in-off, the location of the ball which for the time being is out of play does not admit of a drop-cannon position being gained as the result of the in-off, or as the result of any subsequent in-off. When this is the case, the best way of bringing the second ball into play is by causing the first object ball to come to rest close to it, provided, of course, that the position admits of this method of play. When the ball which is badly situated is the white, it often pays to take no notice of it and continue to score off the red ball. When, however, the ball which is badly placed is the red, it seldom pays to try and continue scoring off the other ball, for in the first place, scoring off the white is much slower than off the red, and secondly, when the red is the object ball and position for an in-off is lost, it can often be regained by means of a pot, whereas, of course, the same does not apply to the white.



Diagram 801 shows the red very badly situated, and also illustrates how by means of a centre-pocket in-off the white ball may be brought close to it. With the white ball to the measurements given under the diagram the in-off must be played as a run-through in order to give the object ball a line of travel more or less as indicated by the intersected line on the diagram. Considerably more pace is imparted to the object ball when the stroke is played as a run-through than when the contact is a half-ball one, and unless this is borne in mind when playing the stroke the white ball may be brought into baulk. Sometimes the in-off into the centre pocket may be of such a nature that although the stroke is quite an easy one it cannot be played in such a manner as to bring the object ball down to the other ball, or the position may be such that although it is not impossible to do this, the stroke necessary to attain the desired position would be too difficult a one to play. When the object ball off which the in-off is played cannot easily be brought down to the ball which, though not in baulk, is temporarily out of play, the stroke must be played in such a way as to leave position for another centre-pocket in-off, and it may be necessary to play several in-offs before position is obtained which will allow of the ball being brought down to the other by means of a stroke which is not a difficult one to play. It is always bad policy to attempt to obtain a certain position by one difficult stroke when the same position can be obtained by means of two or three easy ones.

Diagram 802 shows the red situated exactly as on Diagram 781, but the object

white is in position for an ordinary in-off into the right centre pocket. Here, a slightly thinner than half-ball stroke will throw the white to the other side of the table, more or less as indicated by the intersected line, and thus when the strength and contact are both good the ball will travel approximately as illustrated on the diagram, and in this way the red ball can be rescued from its bad position. When both object balls are on the same side of the table, as on Diagram 801, but the position of the white is such that although it presents an easy in-off into the centre pocket it does not allow of the white being brought down to the red, the stroke can generally be played in such a manner as to leave the object ball well placed for an in-off into the other centre pocket, and then by the



DAIGRAM 803.—A centre-pocket in-off

the cue ball. Object white 19 inches from the side cushion and 58½ inches from the baulk cushion.



DIAGRAM 802.—A centre-pocket in-off bringing the object white to the vicinity of the red ball. Object white 29 inches from the side cushion and 51 inches from the baulk cushion.

succeeding stroke it will very likely be easily possible to bring it down to the red in the manner illustrated on Diagram 802.

Diagram 803 illustrates a stroke sometimes played by good players. Here, the red is in baulk, but by bringing the object white to within a short distance from the baulk line a cannon brings the red ball into play again. This stroke, to bring the object white nearly down to the baulk line is, however, a rather risky one to play, and often results in the ball crossing the line. Players who play this stroke do not attempt to bring the object white quite close to the line, as this would increase the risk of the stroke. With the red ball as close to the D line as

will be on for the next white ball comes to rest six or

inches from the baulk line, as illustrated by the intersected line on the diagram, and such a stroke, of course, presents no difficulty to any good player. A good player, though he may succeed in bringing the white near enough to the baulk line to allow of the red being brought into play by the next stroke, often has to play several centre-pocket in-offs before he obtains the desired position. He is afraid of using too much strength when playing the first one, but the result of this stroke enables him to gauge the strength required for the next one, and if necessary the second one acts as a guide to the third one and so on. If as the result of a particular stroke an object ball travels a certain distance, it is not very difficult to play the stroke over again and make the object ball travel just a little farther, for the strength used for the first stroke is fresh in the mind when the second so quickly follows the first.

Although position for a drop cannon is usually obtained by means of an in-off, it is also often possible to obtain it as a result of potting the red. It is, as a rule, however, infinitely more difficult to obtain a drop-cannon position as a result of a pot than as the result of an in-off, for whereas after an in-off has been made the cue ball can be spotted anywhere in the D, or on its twenty-three-inch line, the stroke which follows a pot has to be played from the resting place of the cue ball. In fact, a pot to leave position for a drop cannon has to be played with far more exactitude than a pot to leave an in-off. When correct position for a half-ball in-off is not obtained as the result of the pot, the in-off may still be on as a very thin stroke, a run-through, a strong forcing stroke, or a screw, but unless the position resulting from a pot admits of the cannon being played at medium strength and by means of a contact which is half-ball, or at

least not much removed from half-ball, the stroke will not be a drop cannon. When the cue ball is only slightly to the right or left of correct position for a drop cannon by means of a plain half-ball medium-pace stroke, the drop cannon may be still on as a half-ball stroke played with side, but if the cue ball is several inches to the right or left of medium-pace half-ball position no drop cannon will be on.

Diagram 804 illustrates how position may sometimes be obtained for a drop cannon—as the result of a pot—without any difficulty. The cue ball and the red are almost in a straight line with the pocket—but not sufficiently in a line with it for a six-shot—and the object white is so situated that with the red on the spot an ordinary drop cannon would be on if the cue ball were to take the place of the red on the diagram. By playing the pot in such a way that the cue ball stops very close to the spot previously occupied by the red, drop-cannon position will thus be obtained.



CH

DIAGRAM 804.—A stab pot into a baulk pocket, to leave position for a drop cannon.

Diagram 805 again shows position for an easy pot into a baulk pocket, but owing to the cue ball and the red not being exactly in a line with the pocket a six-shot is not on. Drop-cannon position can, however, be obtained by playing the pot in such a way that the cue ball follows on some little distance after its contact with the red. It is not, however, quite an easy stroke to get the desired position, for if the cue ball does not follow on sufficiently far it will be impossible to cannon afterwards by means of a medium-pace stroke, owing to the angle being too wide for such a stroke, and should it travel a little too far the resultant angle will be too

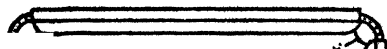


DIAGRAM 805.—A pot into a baulk pocket—by a stroke which causes the cue ball to follow on a short distance—to leave position for a drop cannon.

narrow for a half-ball stroke. In playing this pot to leave position for a drop cannon, it is well to remember that the after-position will be better when the cue ball does not travel quite far enough than it will be when it travels too far.

Diagram 806 illustrates how position for a drop cannon may be obtained by means of an angle pot. Strokes of this nature are, however, anything but easy, as the strength of the stroke and the amount of side—when side has to be employed—have to be very nicely gauged in order to cause the cue ball to come to rest in good position for a drop

DIAGRAM 806.—A pot into a baulk pocket, to leave position for a drop cannon.

CHAPTER XL.

DROP CANNONS.

Drop cannons are constantly played by all classes of players, for not only is the position constantly set up by design by all players who are able to play for position, but it is repeatedly set up by accident by players who cannot or do not look beyond each individual stroke that they play. The red is, let us say, on the spot, and an in-off is played from the white at banging pace. The white travels at high speed up and down or all round the table, but it must come to rest somewhere. It may, of course, remain in baulk, but when this does not happen it is nearly as likely to come to rest in some good position as to take up a bad one. As with the red on the spot a drop cannon is on with the white in so many different positions at either side of the table, it is easy to understand how perfect position is so often set up by a stroke which has been played in such a way as to leave everything except the stroke itself to blind chance.

Although an ordinary drop-cannon position is considered perfect position by all good players, just as many different bad after-positions can result from it as good after-positions. The red is, let us say, on the spot and the object white some little distance above the centre pocket, and correctly situated for a drop cannon from somewhere near the centre of the D line. A really good player could play the cannon a dozen times, or for the matter of that a hundred times or more, without twice getting the same after-position, even though he were always trying to play the stroke in exactly the same way. Some of the positions might be very similar, but no two would be exactly alike, and the same would be true if the drop cannon were played a thousand times. The three principal things which affect the stroke are the pace at which it is played, the kind of contact made with the first object ball, and the way the second object ball is taken. The manner of hitting the cue ball—above or below the centre, to the right or to the left of the centre, or at the centre—also affects the result, and for these several reasons the same drop cannon constantly played will yield an infinite variety of after-positions. Notwithstanding that this is so, however, good position will always result from a drop cannon when the same is well played. When, therefore, a good player plays the stroke, although he cannot be sure of the exact nature of the after-position, he knows that provided he uses good strength and makes a good contact with both balls an easy scoring position will almost invariably result from the stroke.

Diagram 807 shows a position which may be regarded as typical of drop-cannon positions which constantly occur. The cannon is so easy that it cannot well be missed, but unless good strength is used and the red is taken well, the after-position may easily be more or less poor. Many good amateurs, although they play the stroke with good strength, make the mistake of playing to take the red on the outside, whereas in this and similar positions it should always be taken *on the inside*. Those who play to take the second object ball on the outside do so in order that both object balls may come to rest in front of the cue ball. This, however, is the wrong way of playing a drop cannon when the position is at all like that shown on the diagram. When the cue ball takes the red on the outside it is true that both object balls will remain in front of it, but this method of play, although it often enough results in good position

left for a cannon, seldom indeed leaves a pot which is at all reasonably on. The reason of this is because the red cannot be sent towards the pocket when it is taken on the outside. When, therefore, no easy cannon is left as the result of the drop cannon there is no pot to fall back upon, and the player is somewhat fortunate when he can continue scoring by means of an in-off. Again, when as the result of getting on to the outside of the red in the drop cannon from the D, position is left for an easy cannon, the cannon may be of such a nature that, though simple enough as a stroke, it may have to be handled very well indeed to leave any clearly-defined scoring position with which to continue. When this is the case and no in-off is reasonably on, the outlook will be a bad one, for

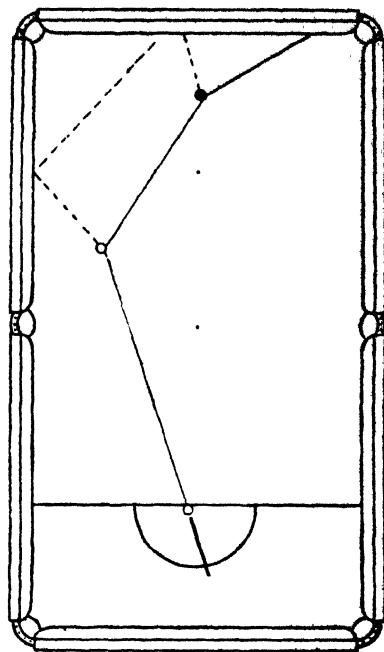


DIAGRAM 807.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot. The cue ball should take the red on the inside and not—as shown by the continuous line—on the outside. Diagram 808 shows how the cue ball should take the red on the inside in this drop cannon.

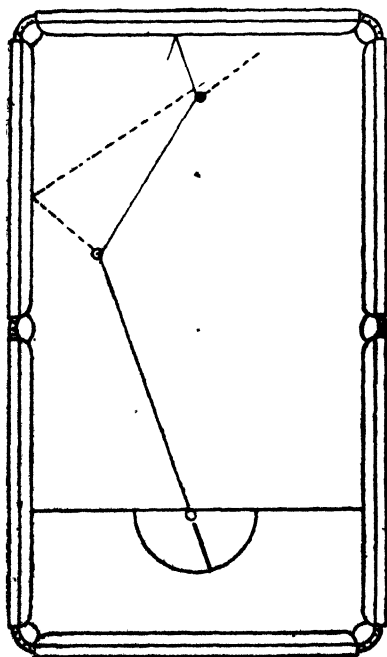


DIAGRAM 808.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot.

position cannot be recovered by potting the red.

Diagram 808 shows the object balls situated exactly as on Diagram 807, and also illustrates the correct way of playing the drop cannon. Here, the cue ball, by taking the red *on the inside* drives it towards the pocket. Driving the red to the pocket does not in this case mean driving it in a straight line or in anything like a straight line to the pocket. Only a very thin contact could drive the red in a straight line to the pocket, but so long as the ball is taken on the inside it will be sent away from the spot and towards the pocket, even though it may be thrown on to the top cushion. The great beauty of this

stroke is that good strength causes both object balls to come to rest in front of the cue ball, for the object white travels across the table, more or less as indicated by the intersected line on the diagram—its actual line of travel depending, of course, on the kind of contact which the cue ball makes with it—and the cue ball after its contact with the red travels away from it. Thus a position with both balls in front of the cue ball, to gain which so many players take the red on the outside, is almost as easily attained by means of the much sounder stroke which takes the red on the inside, and by so doing drives it some distance to the pocket. One result of the cannon shown on Diagram 808 is illustrated by the continuous line and the two intersected lines which indicate the balls' lines of travel, and the illustration represents an actual stroke at the table. In this particular instance the drop cannon has left position for a very simple cannon off the white, by means of which the red can be dribbled some distance to the pocket without sending the object white very far from the spot.

The cannon illustrated on Diagram 808 is a much sounder stroke than the one on Diagram 807, not only because when taken on the inside the red is driven towards the pocket, but because a cover is less likely to occur when the red is taken in this manner than when the cue ball takes it on the far side. When a cover occurs at the top of the table as the result of a drop cannon it is sometimes no difficult matter to get a cannon off a cushion, and such a cannon may even be quite an easy stroke, but the reverse will often be the case and a more or less difficult *massé* stroke may be the only way out of the difficulty, even for a good player, with the exception of some extremely uncertain stroke all round the table which no player who is at all capable at *massé* strokes would ever think of attempting. The positions in which the balls may shape themselves at the top of the table as the result of a drop cannon are so infinite in number that a cover is bound to occasionally occur there even with the very best of players, and consequently a stroke which is less likely than another to result in a cover is an infinitely better one if for no other reason than this. Moreover, the covers which occur when the cue ball takes the red on the outside, in positions at all like the one illustrated on Diagrams 807 and 808 are, as a rule, of a worse kind than those which result from strokes wherein the cue ball takes the red on the inside. The very bad after-position, which is shown on Diagram 807 as the result of a drop cannon, is a representation of the result of an actual stroke at the table. The reason that covers are generally worse—as regards the likelihood of any further score—when the cue ball takes the red on the outside than they are when the point of contact is on the near side of the ball is because in the former case the cover is more often one with the cue ball very close to the cushion than it is in the latter case. The cover which has resulted from the drop cannon illustrated on Diagram 807 shows how, as the result of a thinner than half-ball contact with the red, both the cue ball and the red have travelled to the top cushion. With the balls in the position shown on Diagram 807 the drop cannon might be played a great many times without a cover occurring—the best player in the world could not get a cover just by playing for one—and good position would be gained oftener than not as the result of a good-strength stroke, but the good position would invariably be for a cannon and never for a pot. By taking the red on the inside, as shown on Diagram 808, not only will the risk of a cover be considerably minimised, but a good-strength stroke will generally leave very good position, sometimes for an easy cannon, sometimes for a pot, and often as the result of such a stroke there will be a choice of either a cannon or a pot.

The various kinds of good position that may result from a properly-played

drop cannon are so numerous that it may not be uninteresting to show just a few other good positions which have resulted from actual strokes at the table from a placing of the object balls exactly the same as on Diagram 808.

Diagram 809 shows the drop cannon made by a nearly full contact on to the red. Notwithstanding that the red has been taken so full, it has travelled well to the right of the spot, for the cue ball has approached it from the position of the object white. Even when in this drop-cannon position the cue ball falls quite full on to the red, it takes it as it were on the inside, for it drives it away from the spot and keeps it in front of it, and only when the contact is considerably less than full and the ball is taken on the outside can the cue ball travel to the right of the red. The

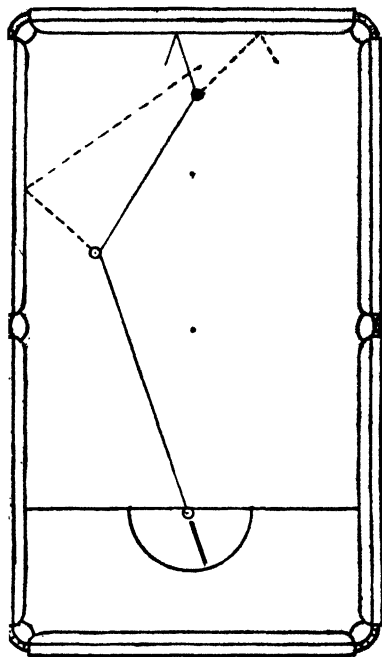


DIAGRAM 809.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot.

continuous line and the intersected lines on Diagram 808 indicate the cover that has resulted from an actual stroke at the table, nevertheless the new position is a good one, as it affords an easy cannon off the top cushion.

Diagram 810 shows the object balls placed as before, and the lines illustrate the good after-position which has resulted from the drop cannon. The strength of stroke has not been quite the same as in the one illustrated on Diagram 809, and the object balls have both been taken somewhat differently, consequently the resultant position, although a very good one, is totally different from the one which has resulted from the cannon illustrated on

81. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot.

another different after-position—though a very good one—which has resulted from a

drop cannon with the balls in exactly the same position as on the previous diagrams. The contact with the object white has been somewhat fuller than hitherto, and this has resulted in this ball taking the side cushion a little higher up than in the previous strokes, and in consequence of this it has travelled to somewhere near the centre of the top cushion. The cue ball has fallen full on to the red, but without much pace, and has thus run through it a short distance and the red has rebounded from the top cushion to leave position for a pot.

Diagram 812 shows the object balls in the same position as in the previous diagrams, and also illustrates how by reason of the cue ball having taken the red on the inside, a stroke which has been none too good as regards contact with the object white has given good after-position. Owing to the object white

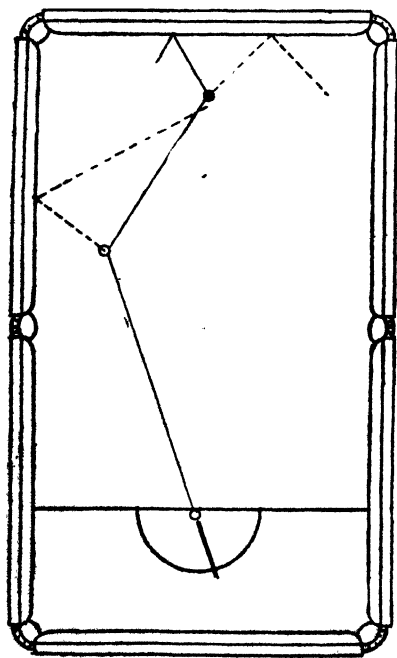


DIAGRAM 812.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot.

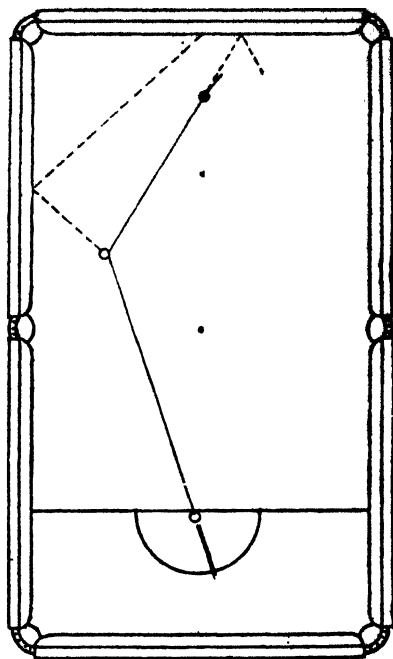


DIAGRAM 811.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot.

having been taken somewhat thinner than half-ball it has travelled across the table to a position below the spot, and by reason of the cue ball having taken the object white thinner than half-ball it has travelled with rather too much pace to the red, and thus this ball in its turn has travelled to the cushion and rebounded a considerable distance from it. Nevertheless, the actual position which has resulted from this particular cannon presents a choice between the simplest of ball-to-ball cannons—which can be played to leave further good position—and an equally simple half-ball in-off from the red.

As already shown, the after-position which results from an ordinary long

the stroke is played with anything like good strength, and when in addition to

this the cue ball cannons on to the near side of the red. When, however, considerably too much strength is used the after-position will generally be bad, notwithstanding that the cue ball may have taken the red on the inside.

Diagram 813 shows the object balls situated exactly the same as on the previous diagrams, and also illustrates the kind of after-position that poor players so often get as the result of an ordinary drop cannon from the D. Here, the red has been taken on the inside correctly enough, but owing to the stroke having been played with too much pace it has rebounded a long way down the table and has come to rest close to the side cushion. Players whose best breaks seldom exceed twenty should try to play a drop cannon

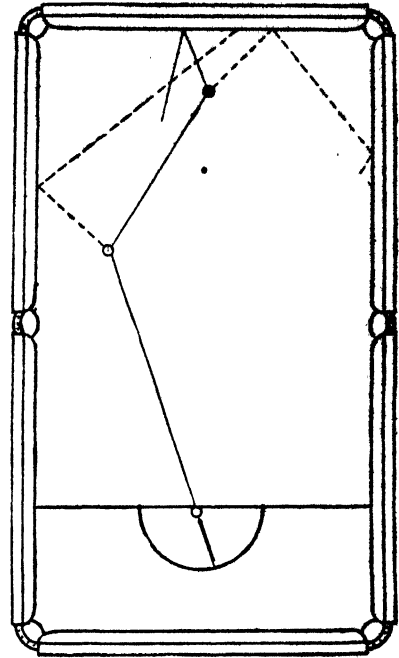


DIAGRAM 813.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot. An example of the bad position that results from a stroke played with too much pace.

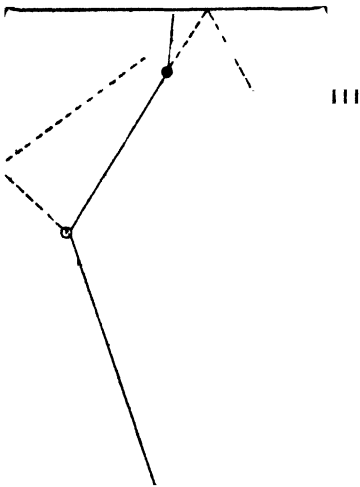


DIAGRAM 814.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. Red ball on the spot. An example of the very bad position which may result from a very full contact with the red.

quite gently, for as they almost always play this stroke with too much strength it is unlikely that they will play it too slowly when using what for them will be quite a slow stroke.

Diagram 814 illustrates a very bad after-position that sometimes results from a drop cannon even at the hands of good players. The strength of the stroke has been all right, but owing to the cue ball having taken the red very full and neither on the inside nor the outside, it has run through it and has come to rest on the top cushion. The very full contact with the red has, however, caused this ball to travel considerably farther than it would have done had it been taken on the inside and consequently with the cue ball on the cushion the position is about

bad as it could possibly be. Only a very slight difference in the kind of contact which the cue ball makes with the red may sometimes make all the difference between a very good leave and a very bad one, and players who play drop cannons without any system except good strength, and leave it to the balls themselves to form up well will find that although they may more often than not get more or less good after-position as the result of the stroke, the percentage of really bad leaves will be very considerable.

Some players find a difficulty in taking the second object ball on the inside or the outside, as the case may be, when playing a drop cannon from the D, and therefore play for the cannon only. If, however, the drop cannon is of a nature at all like the one illustrated on Diagram 814 and the player has spotted for a stroke that will take his ball full on to the red as the result of a half-ball contact with the white, he will by moving his ball an inch or so more to the right cause it to take the red on the inside, and an alteration in the spotting of the cue ball to the extent of about an inch the other way will—when the object white is taken half-ball—result in the red being taken on the outside. In short drop cannons—examples of which will presently be given—the spotting of the cue ball in the D has, however, to be very different when, as the result of a half-ball stroke, it is desired to take the second object ball on the inside from what is necessary when, as the result of the same stroke, it is desired to take the second ball on the outside. In fact, in extreme

cases with both object balls high up the table, the difference in the spotting for the two strokes, as measured along the D line, may amount to as much as six inches or even more.

Diagram 815 illustrates still another way in which a drop cannon may lead to bad after-position. The stroke has been played with good strength and the red ball has been taken on the inside, but owing to the contact with the red ball having been a *very thin one* the cue ball has travelled very straight to the top cushion, and with considerably more pace than it would have done had the contact been a fuller one. The result has been that a kiss has taken place between it and the object white. When in a long drop cannon a kiss takes place between the cue ball and the first object ball the after-position is always obscure, for it depends to a very great extent on the nature of the kiss. Sometimes it will turn out all right, but at other times just the reverse will be the case. When the cue ball has been spotted correctly for a long drop cannon from the D, too thin a contact with the second object ball is generally due to a somewhat thinner than half-ball contact with the first ball. In the position shown on Diagram 815 the red

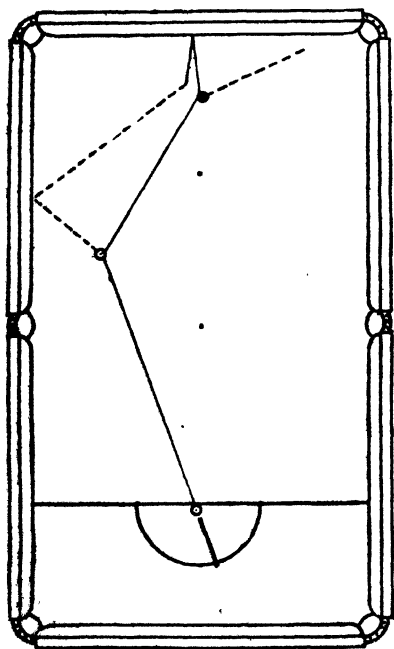


DIAGRAM 815.—A drop cannon from the D. Object white 16 inches from the side cushion and 60 inches from the top cushion. A kiss between the object white and the cue ball often takes place as the result of the red being taken too thinly by the cue ball.

should be taken on the inside. This being so it can be easily understood how a somewhat incorrect contact with the white may result in the red being taken too much on the inside. Care should therefore always be taken to make as correct a contact as possible with the first object ball.

Drop cannons from the D may be divided into two broad classes, one consisting of those positions in which both object balls are on the same side of the table and the other of those in which one of the balls is to the right of the central line of the table and the other to the left of it. In any long drop cannon from the D, with both object balls on the same side of the table, a well-played stroke will cause both object balls to come to rest in front of the cue ball, for the first object ball will cross

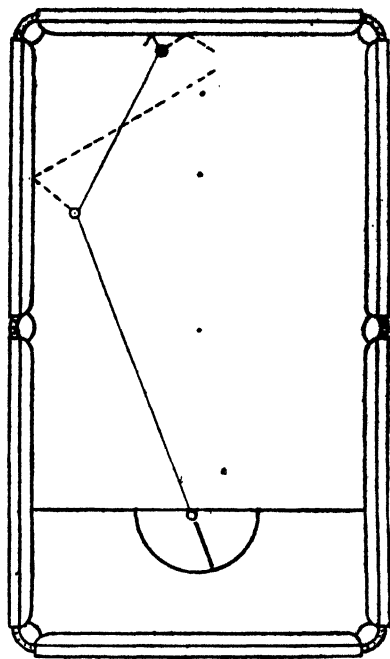


DIAGRAM 816.—A drop cannon from the D. Object white 8 inches from the side cushion and $44\frac{1}{2}$ inches from the top cushion. Red ball 3 inches from the top cushion and 22 inches from the side cushion.

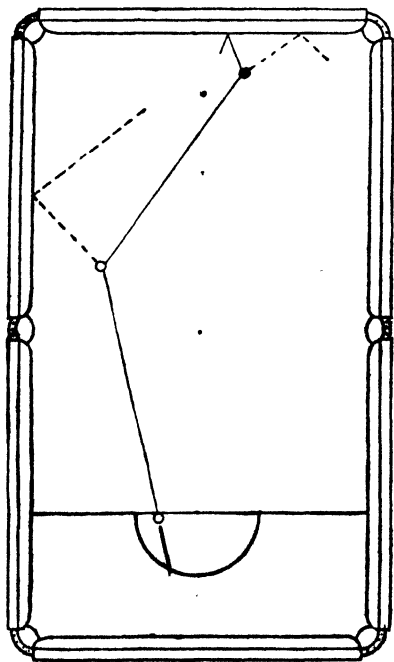


DIAGRAM 817.—A drop cannon from the D. Object white 18 inches from the side cushion and 58 inches from the top cushion. Red ball 10 inches from the top cushion and $23\frac{1}{2}$ inches from the side cushion.

over after striking the side cushion. Even when the red is on the spot, and thus neither to the right nor to the left of the central line, a well-played long drop cannon will generally leave both balls in front of the cue ball, for provided the object white is not taken less than half-ball sufficient pace will be imparted to it—except on tables with very slow cushions—to cause it to travel as far as the central line of the table or even to cross this line, and if the white ball travels as far as the central line both balls must come to rest in front of the cue ball if the red has been taken on the inside.

Diagram 816 shows a drop-cannon position with both object balls on the same side of the table. The intersected line drawn from the object white indicates the manner in which this ball will travel as the result of a half-ball

stroke, consequently when the cue ball takes the red on the inside both object balls will come to rest in front of it.

Diagram 817 shows a position with the object balls on opposite sides of the central line of table. Here, although the object white cannot be made to cross over to the second object ball, the red should still be taken on the inside, for in this way it will be sent to the pocket and position for a pot will generally result from a good-strength stroke.

Diagram 818 shows another position with the object balls situated on opposite sides of the table. If the balls are set up to the measurements given under the diagram it will be found that no in-off into the centre pocket is on—even from the extreme end of the D—by any ordinary half-ball stroke. A drop cannon is, however, quite a simple stroke, but the object white cannot be made to cross the table to the red, and therefore the only thing to play for is to leave the red well situated as regards the corner pocket. A stroke which causes the cue ball to drop gently on to the inside of the red will generally leave this ball well placed for the next stroke. Unless, however, the contact with the red is a gentle one the after-position may easily be a very bad one owing to the red rebounding too far from the top cushion to leave either a pot or an in-off to continue with. A still better way of playing this drop cannon is to drop gently on to the red taking it almost full, but just slightly on the inside. Owing to the fact that the red is touching the cushion this almost full contact with it will result in a kiss, and as the result of this kiss the red ball will travel towards the pocket more or less as indicated by the intersected line on the diagram, and thus very good position will be left to continue with. Should the cue ball, however, take the red slightly on the outside, but sufficiently full to cause a decided kiss the after-position—as regards the red ball—is bound to be a very bad one, for the cue ball will be thrown towards the side cushion and the red ball will hardly be moved. This stroke to kiss the red to the pocket is not an easy one to play with certainty, but to cannon gently on to the inside of the red ball should not present the slightest difficulty to any fair player, and a cannon played with only this object in view often results in this favourable kiss taking place.

Diagram 819 illustrates another drop cannon with the red dead on the top cushion. As, however, both object balls are on the same side of the table a good-strength stroke will cause the object white to cross over to the red, and consequently by taking the red on the inside both object balls will come to rest in front of the cue ball. The best kind of contact that the cue ball can make

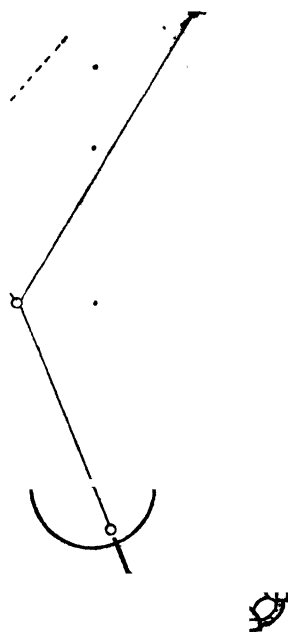


DIAGRAM 818.—A drop cannon from the D. Object white 23 inches from the centre pocket and on the line from one centre pocket to the other. Red ball touching the top cushion and 15 inches from the side cushion.

with the red is an almost full one, but just slightly on the inside at gentle strength, for such a contact will result in a decided kiss and in this way the red will either be held where it is or will travel a short distance to the right. In either case all three balls will be bunched together—for the object white will cross over more or less as indicated by the intersected line on the diagram—and thus the resultant position will almost always be very good.

Diagram 820 shows position for a very easy ball-to-ball cannon from the D. The correct way of playing the cannon is, however, not by a ball-to-ball stroke, but by a stroke which causes the cue to strike the cushion at a point very close to the red. This

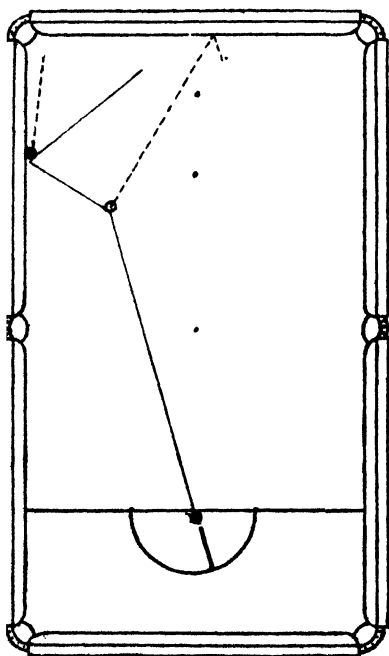


DIAGRAM 820.—A cannon hitting the side cushion just in front of the red, to drive this ball up to the pocket. A better positional stroke than a ball-to-ball cannon. Object white 17 inches from the side cushion and 43 inches from the top cushion. Red ball touching the side cushion and 28 inches from the top cushion.

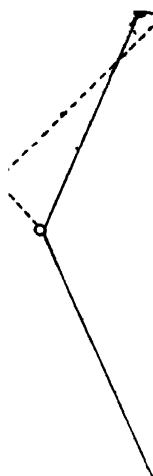


DIAGRAM 819.—A drop cannon from the D. Object white 10 inches from the side cushion and 57 inches from the top cushion. Red ball touching the top cushion and 27 inches from the side cushion.

necessitates the cue ball being spotted considerably to the right of the correct spotting for a ball-to-ball cannon. Right side—running side off the cushion—should be used for this cannon, made by hitting the cushion just a very little in front of the red, for as the result of this side on the cue ball, the red—when the cushion has been taken sufficiently close to it—will be pushed up to the pocket more or less as indicated by the intersected line on the diagram, and good after-position will almost invariably result from a good-strength stroke. Should the cue ball, however, take the cushion some little distance from the red, though sufficiently near it for the cannon to be made, the after-position may be a very bad one, for when the cue ball after striking the cushion takes the red thinly

it will not drive it up the table and may, in fact, only move it a few inches. In the position shown on Diagram 820 the red is touching the side cushion, but even with it slightly away from it this stroke to take the cushion just in front of the ball is the correct one to play.

Diagram 821 shows a position of exactly the same nature—as regards the stroke to be played—as the one given on Diagram 820. By playing with left side—running side off the cushion—and taking the side cushion just in advance of but very close to the red a good-strength stroke will send the ball up to the pocket, more or less as indicated by the intersected line on the diagram.

Diagram 822 shows position for a simple long drop cannon from the D

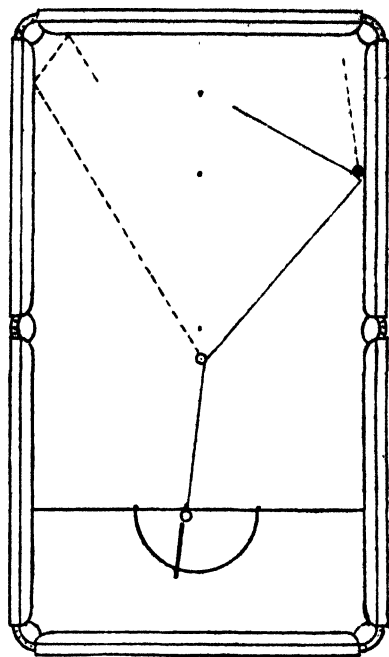


DIAGRAM 821.—A cannon hitting the side cushion just in front of the red, to drive this ball up to the pocket. A better positional stroke than a ball-to-ball cannon. Object white on the central line of the table and 62 inches from the baulk cushion. Red ball touching the side cushion and opposite the pyramid spot.

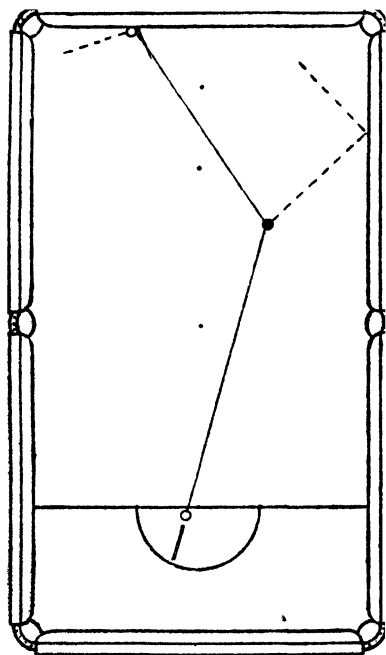


DIAGRAM 822.—A slow long drop cannon from the D. Red ball 23 inches from the side cushion and 47 inches from the top cushion. Object white touching the top cushion and 22 inches from the side cushion.

with the red as the first object ball. Here, owing to the object balls being on opposite sides of the table the red cannot cross over to the white, consequently the cannon should be played with very little strength, in order that the red may be placed for a pot or for an in-off. When the cue ball cannons on to the outside of the white both balls will be left in front of the cue ball, but this does not necessarily mean that the resultant position will present an easy cannon. When, on the other hand, the cue ball cannons nearly full on to the white—taking it on the inside—position will sometimes be left for an in-off from the white. The chief object in view, however, when playing this long drop

cannon should be to leave the red well placed for the next stroke.

Diagram 823 shows the object balls in position for a short drop cannon. Short drop cannons—so called owing to the comparatively short distance which the cue ball has to travel after hitting the first object ball—with one of the object balls right at the top of table have, as a rule, to be played differently from long drop cannons. In all the examples of long drop cannons given in this chapter when the second object ball is the red, the cue ball has to take it on the inside, but in short drop cannons of the nature of the one shown on Diagram 823 the second object ball, whether the red or the white, should be taken on the outside. In the long drop cannons already described the red, as the second object ball, has to be taken on the inside because correct contact with this ball causes it to travel towards a corner pocket, and in those positions with both object balls on the same side of the table a good contact with the first object ball causes this ball to cross over and come to rest in front of the cue ball, and in this way both object balls come to rest in front of the cue ball. With the balls situated as on Diagram 823, however, not only will a stroke which causes the cue ball to cannon on to the inside of the red not cause the red to travel to a corner pocket, but it will not even leave both object balls in front of the cue ball, for the first object ball—here the white—cannot cross over to the other ball. Diagram 823 illustrates the cannon made by a stroke which causes the cue ball to take the red on the inside. The cue ball has come to rest between the object white and the red, for the object white travels from the side cushion to the top cushion more or less as indicated by the intersected line on the diagram. Very often too, in addition to the resultant position being one with the cue ball between the object balls—when in the position illustrated on Diagram 823 the cue ball takes the red on the inside—it is also one with the object white very close to the cue ball. When the object white and the cue ball come to rest close to one another the position is generally a poor one, even though it may not be very difficult to score from it. Also when—as the result of the cannon shown on Diagram 823—the two white balls are left nearly touching it may be difficult to get at the red owing to the object white being in the way. Again, when this cannon is played in the manner illustrated on the diagram a kiss often takes place between the cue ball and the object white just after the rebound of these balls from the top cushion, and though sometimes the kiss may be a favourable one, just the reverse is as likely to be the case.

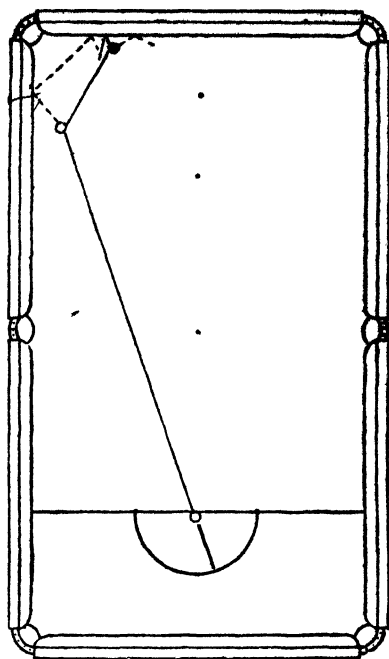


DIAGRAM 823.—A short drop cannon from the D. Red ball $1\frac{1}{2}$ inches from the top cushion and $14\frac{1}{2}$ inches from the side cushion. Object white $5\frac{1}{2}$ inches from the side cushion and 21 inches from the top cushion. Taking the red ball on the inside does not give as good a result as taking it on the outside. Diagram 824 illustrates the correct stroke.

Diagram 824 shows the object balls in exactly the same position as on Diagram 823, and also illustrates the correct way of playing this short drop cannon. By taking the red on the outside—in order to ensure this the cue ball must be spotted considerably more to the left than when playing to take the red on the inside—both balls will come to rest in front of the cue ball, and thus the after-position that results from a stroke played with plenty of drag and without much pace will generally be a good one. Sometimes it will present the easiest of cannons and at other times the next stroke will be a cannon off the top cushion. Occasionally, it is true, a cover may occur as the result of the cue ball taking the red on

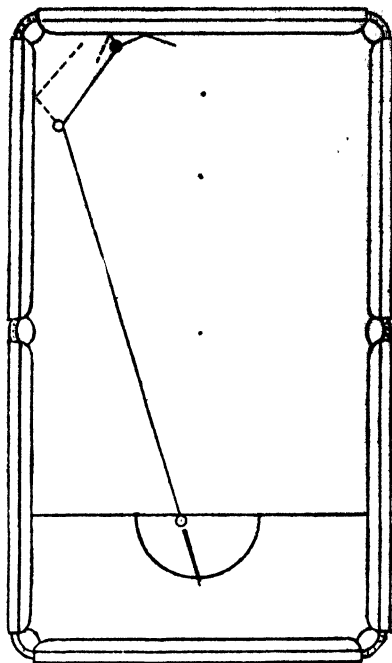


DIAGRAM 824. A short drop cannon from the D. Red ball $1\frac{1}{2}$ inches from the top cushion and $14\frac{1}{2}$ inches from the side cushion. Object white $5\frac{1}{2}$ inches from the side cushion and 21 inches from the top cushion. Taking the red on the outside leaves both object balls in front of the cue ball.

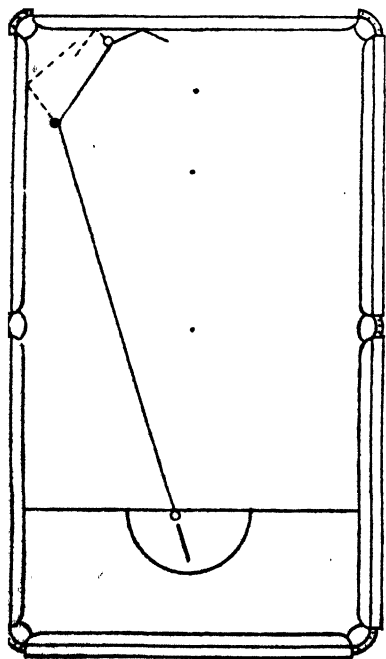


DIAGRAM 825.—A short drop cannon from the D. Red ball $5\frac{1}{2}$ inches from the side cushion and 21 inches from the top cushion. Object white $1\frac{1}{2}$ inches from the top cushion and $14\frac{1}{2}$ inches from the side cushion. Taking the white on the outside leaves both balls in front of the cue ball.

the outside, but even when this happens it will often be quite easy to cannon off the top cushion.

Diagram 825 illustrates exactly the same position as the one shown on Diagram 824 with the exception that the object white and the red have changed places. Here, if the object white is taken on the inside the red may possibly be well placed for the next stroke, for as the result of getting on to the inside of the white the cue ball will come to rest between the two object balls, and consequently the red—when the stroke has been played with correct strength—will be between the cue ball and the pocket. Even in this position, however, it is sounder to take the object white on the

for when it is taken on the inside the cue ball and the red may come to rest so close together that not only may a pot be quite out of question for the next stroke, but even an in-off may not be on in the ordinary way of speaking. By taking the white on the outside, as shown on the diagram, the object balls will come to rest in front of the cue ball and in this way not only will position in all probability be left for a cannon, but in addition to this the red may also be favourably situated for a pot.

Diagram 826 illustrates a variation of the short drop cannon shown on Diagram 824. Here, the correct game



DIAGRAM 826.—A short drop cannon from the D. Red ball touching the top cushion and $16\frac{1}{2}$ inches from the side cushion. Object white 19 inches from the top cushion and on the central line of the table.

is to take the red on the inside, for in the first place a good contact with this ball may leave it favourably situated for a pot, or failing this for an in-off, and in the second place although both object balls will come to rest in front of the cue ball when the red is taken on the outside, such a stroke cannot bring them together. In the cannon illustrated on Diagram 824 the object white strikes the side cushion and then travels to the red, whereas in the cannon shown on Diagram 826 the object white strikes the top cushion and travels away from the red both before and after striking the cushion.

Diagram 827 shows a placing of the balls which from the D presents an easy short drop cannon, also an easy in-off



827.—A position which, from the D, presents a simple ball-to-ball cannon or an ordinary top-pocket in-off. Red ball 19 inches from the top cushion and 21 inches from the side cushion. Object white touching the top cushion and right behind the spot. The cannon—even though played with plenty of drag—generally causes the red to rebound too far from the top cushion to leave position for either a pot or an in-off. Diagram 828 illustrates the in-off.

from the red. Many players in this and similar positions play a slow drop cannon with the idea of leaving the red close to the pocket. It is, however, extremely difficult to leave the red close to the pocket as the result of a cannon made by means of a half-ball stroke, for unless the cue ball travels to the object white with very little more strength than is necessary to reach it, the red ball will rebound too far from the top cushion to leave the position played for, and to play a long-distance short drop cannon—even with plenty of drag—with so little pace that the cue ball may only just reach the second object ball is too risky a stroke to attempt. The intersected line on the

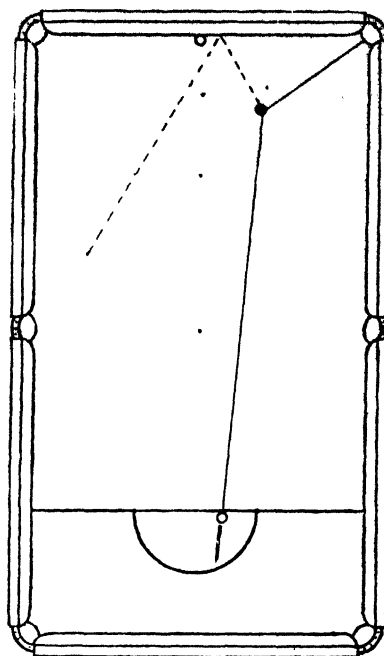


DIAGRAM 828.—An in-off instead of a cannon. Object balls situated exactly as on Diagram 827.

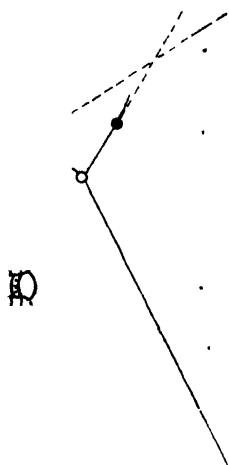


DIAGRAM 829.—A short drop cannon from the D, taking the red on the inside to leave both object balls at the top of the table behind the spot. Red ball $15\frac{1}{2}$ inches from the side cushion and $32\frac{1}{2}$ inches from the top cushion. Object white $10\frac{1}{2}$ inches from the side cushion and 45 inches from the top cushion.

diagram indicates roughly the distance the red ball is likely to travel when the cannon is played with plenty of drag with the intention of placing the red in position for a pot, or failing this, for an in-off.

Diagram 828 shows the object balls in exactly the same position as on Diagram 827, and illustrates how by means of an in-off from the red position for a drop cannon may be left to continue with. In order to avoid any chance of the red kissing the white—a kiss may take place as the result of a slightly less than half-ball contact—a slightly fuller than half-ball stroke should be used for this in-off.

Diagram 829 shows a location of the balls which is typical of positions which constantly occur. With the red as the second object ball there are two different ways of playing this short drop cannon, viz., by taking the red on

the inside and sending it to the vicinity of the spot—or to some position behind the spot—or by taking it on the outside and by this means causing it to travel towards the corner pocket. Diagram 829 illustrates the former stroke. The object white crosses over and comes to rest above the spot and the red ball also comes to rest in the neighbourhood of the spot. In the cannon shown on the diagram—an illustration of an actual stroke at the table—the cue ball makes a nearly full contact with the red, nevertheless, owing to the direction of the cue ball's travel after its contact with the object white, the red is, as it were, taken on the inside and consequently travels to a point on the top cushion not very far from its

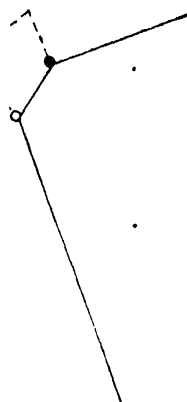


DIAGRAM 830.—A short drop cannon from the D taking the red on the outside, to leave position for a pot. Object balls situated exactly as on Diagram 829.

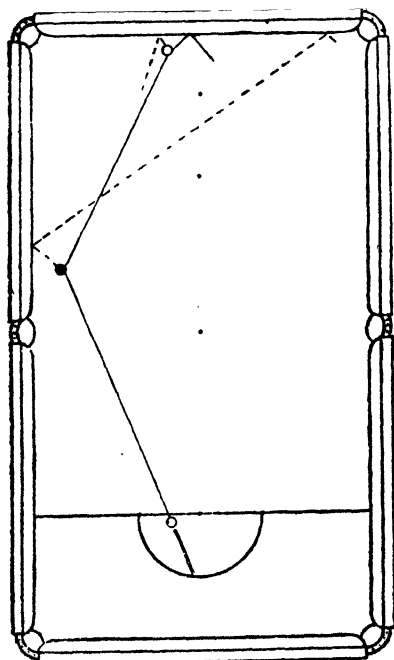


DIAGRAM 831.—A long drop cannon from the D doubling the red across the table to the vicinity of the corner pocket, to leave position for a pot. Red ball $5\frac{1}{2}$ inches from the side cushion and $50\frac{1}{2}$ inches from the top cushion. Object white 3 inches from the top cushion and $20\frac{1}{2}$ inches from the side cushion.

centre. A stroke that causes the cue ball to take the red a little less full but still pretty full will result in the red travelling to the vicinity of the spot. When the cue ball takes the red on the inside both object balls come to rest in front of the cue ball—as indicated by the intersected lines on the diagram—and good top-of-the-table position will generally result from a good-strength stroke.

Diagram 830 shows the object balls situated exactly as on Diagram 829, but illustrates the cannon made by a stroke which causes the cue ball to take the red on the outside. The object white crosses over as before—although it strikes the side cushion higher up, by reason of the different spotting of the cue ball in the D which is necessary for a cannon on to the outside of the red—but the red travels towards the

t—more or less as indicated by the intersected line on the diagram—when the contact has been a good one. In this way too, therefore, good top-of-the-table position can be obtained as the result of a well-played stroke.

In very many drop-cannon positions the red ball—when it is the first object ball—can be doubled across the table to the corner pocket, and when such a stroke is easily on it is the correct one to play. Diagram 831 illustrates one of these constantly-occurring positions. Here, a cannon played by means of a half-ball stroke will cause the red to travel towards the right top pocket—more or less as indicated by the intersected line on the diagram—and a good-strength stroke will cause it to come to rest in the vicinity of the pocket, and thus position will in all probability be left for a pot, or failing this for an in-off.

Diagram 832 illustrates another position—typical of others that constantly occur—in which the correct stroke to play is to double the red across the table to the vicinity of the corner pocket. Here, a half-ball stroke will give the red a good line of travel, but in some variations of this short drop cannon the cue ball must take the red somewhat fuller or somewhat thinner than half-ball, as the case may be, in order to give it good direction. Short drop cannons which allow of the cue ball being spotted at various positions in the D are such simple strokes that they can easily be made by means of a fuller or a thinner than half-ball stroke, as well as by a half-ball stroke, consequently when the red is the first object ball it can often be sent to the vicinity of the corner pocket by taking it somewhat thinner or considerably fuller than half-ball, as the case may be, when a half-ball stroke will not give it good direction. In long drop cannons too, when the red is the first object ball it can often be sent to the corner pocket by means of a thinner or a fuller than half-ball contact when a half-ball stroke will not serve, but with the object balls far apart a ball-to-ball cannon does not afford the same amount of latitude for variations in the kind of contact with the first object ball as it does when the object balls are only a comparatively short distance apart.

Diagram 833 shows position for a wide ball-to-ball cannon. This cannon is an easy enough stroke when played with plenty of pace, but the after-position from such a stroke is very obscure. With the balls to the measurements given under the diagram the cannon should be played with plenty of side and drag, for in this way the stroke becomes a drop cannon, and a good contact with the red results in this ball travelling towards the corner pocket, as indicated by the

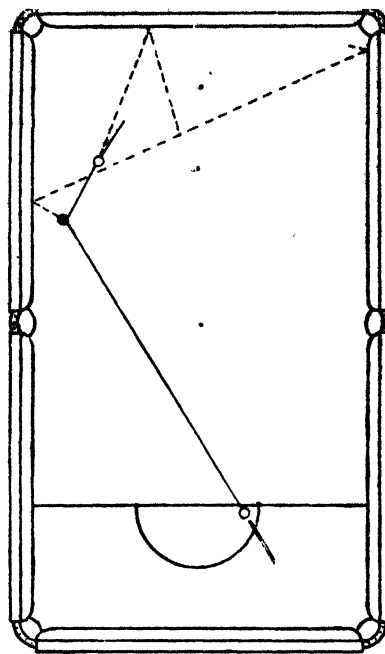


DIAGRAM 832.—A short drop cannon from the D doubling the red across the table to the vicinity of the top pocket, to leave position for a pot. Red ball $6\frac{1}{2}$ inches from the side cushion and $47\frac{1}{2}$ inches from the top cushion. Object white 11 inches from the side cushion and 29 inches from the top cushion.

intersected line on the diagram. Drag not only lessens the pace at which the cue ball travels, but it also—even in strokes played without side—increases the width of the throw-off angle, for although the reverse rotation which drag imparts to the cue ball is exhausted before contact is made with the first object ball, forward rotation is not nearly so strongly developed in the cue ball when it only travels part of the way as a forward-rolling ball, as it is when it travels in this manner from the moment when struck by the cue ball. When the position is such that a long drop cannon from the D is not quite on—even with plenty of drag and side—the cannon should be played off the top cushion instead of by means of a forcing stroke. Positions constantly occur which present a drag and running-side drop cannon from the D when playing with bonzoline balls, but which only allow of the cannon being played as a forcing stroke, or off the top cushion, when playing with ivory balls. This is, of course, owing to the somewhat wider throw-off angle of bonzoline balls as compared with average ivory balls. In the chapters on CENTRE-POCKET IN-OFFS and TOP-POCKET IN-OFFS reference has already been made to the great superiority of bonzoline balls over ivory balls when playing the in-off game by reason of the numerous positions which allow of an in-off being played by means of an ordinary half-ball stroke with running side when playing with bonzoline balls, but which with ivory balls require a forcing or a screw stroke—strokes not to be compared with an ordinary half-ball stroke as regards ease of control of the object ball. Further proof of the great advantage which the wider throw-off angle of bonzoline balls often gives a player is afforded by those positions which allow of a ball-to-ball cannon being made by a running-side stroke when playing with these balls but which require high pace or necessitate a cushion stroke when using ivory balls.

In positions at all similar to the one illustrated on Diagram 833 when a cannon by a slow direct stroke is just not on the cannon has to be played off the top cushion, and a cannon off the top cushion is never as easy as, and is generally far more difficult than a drop cannon from the D. Moreover, further scoring position is more easily obtained when the cannon can be made by a slow direct stroke than when it has to be played off the cushion. When the angle is such that a drop cannon has to be played with plenty of drag and side an accurate contact with the first object ball is essential, for a half-ball stroke gives the cue ball a wider throw-off than any other stroke. In wide drop-cannon positions a somewhat fuller or thinner than half-ball contact with the first object ball will

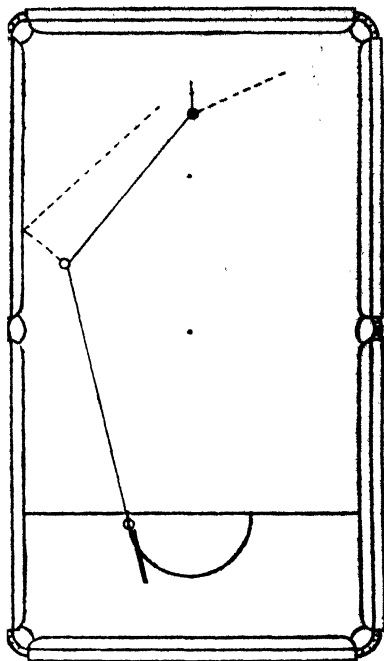


DIAGRAM 833.—A very wide drop cannon played with plenty of running side. Red ball 16 inches from the top cushion and on the central line of the table. Object white 10½ inches from the side cushion and 62 inches from the top cushion.

inevitably result in the missing of the stroke, by reason of the cue ball's passing the second object ball on the inside. In some positions although a cannon by a slow direct stroke is quite possible with extreme side and drag in combination with a true half-ball stroke it is much safer to play the cannon off the top cushion, or even by a forcing stroke, owing to the slow cannon requiring so accurate a stroke.

Diagram 834 illustrates a position which is typical of others of the same nature which not infrequently occur. Here, with the balls to the measurements given under the diagram, a ball-to-ball cannon is not possible by a half-ball stroke and can only be made by means of quite a thin stroke, or by means of a considerably fuller than half-ball stroke. The thin stroke is never used by good players owing to the cannon being too difficult by this method of play. The fuller than half-ball stroke is also a difficult one and should be played with plenty of drag and check side. There are two chances of getting the cannon, for the cue ball may travel direct from one ball to the other or—when strong check side has been imparted to the cue ball—the cannon may be made off the top cushion, as indicated by the continuous line on the diagram. Unless, however, the cushions are in good condition it is extremely difficult to cannon off the top cushion in the manner illustrated on the diagram, for check side does not act in nearly so effective a manner when the cushions are old and hard as it does when they are very resilient. This narrow cannon with strong check side is rendered somewhat less difficult by slightly elevating the butt of the cue and aiming as though just to miss the red ball. Played this way the cue ball curves inwards a little and thus approaches the object ball at a somewhat more favourable angle for the cannon.

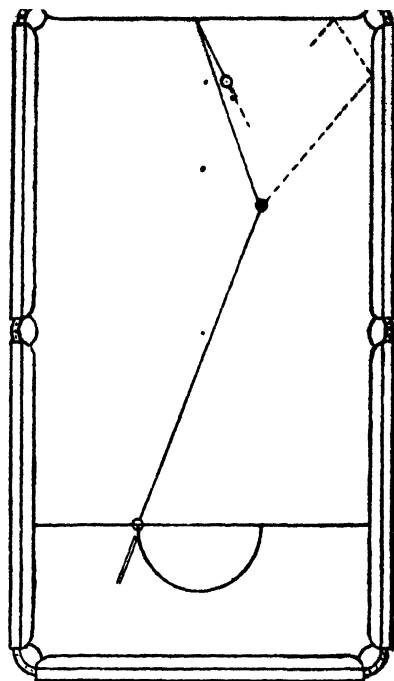


DIAGRAM 834.—A very narrow cannon played with strong check side. Red ball $23\frac{1}{2}$ inches from the side cushion and $40\frac{1}{2}$ inches from the top cushion. Object white $11\frac{1}{2}$ inches from the top cushion and 31 inches from the side cushion.

CHAPTER XLI.

GETTING POSITION FOR TOP-OF-THE-TABLE PLAY.

Top-of-the-table position is often left by one's opponent, and in addition to this there are very many different ways by which it may be obtained by the player himself. In fact, the ease with which any fair player can obtain good position at the top of the table is perhaps just about equalled by the difficulty which he experiences in staying there. The most usual stroke by which top-of-the-table position is obtained is the drop cannon—various typical examples of which were analysed in the last chapter—but the position may be obtained in various other ways, viz., by the agency of a pot—when the object white is in the vicinity of the spot; by playing an in-off from the white in such a way that this ball is sent to the vicinity of the spot, and then following this stroke by potting the red from the D; by a cannon which causes the object white to travel to the vicinity of the spot and at the same time places the red in position for a pot, by means of which the cue ball can afterwards be made to travel to the top of the table; and by a five-shot from the D.

Diagram 835 illustrates how, with the object white right behind the spot,

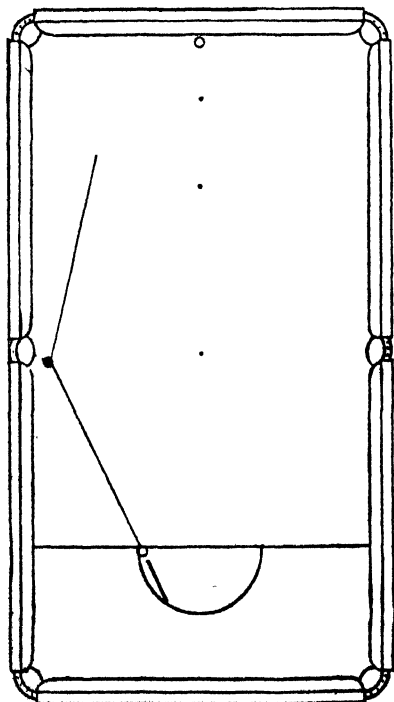


DIAGRAM 835.—Getting position for top-of-the-table play by means of a centre-pocket pot. A better way of playing the stroke is shown on Diagram 836.

perfect top-of-the-table position may be obtained by means of a centre-pocket pot. The pot is here so easy that it cannot well be missed, consequently practically everything in this stroke is the strength at which it is played. In the stroke illustrated on the diagram the pot has been played without much pace and the cue ball has come to rest at a point considerably lower down the table than the spot, and the resultant position is a good one.

With the object balls situated as shown on Diagram 835 good players do not, however, pot the red by the slow stroke shown on this diagram, but use a faster stroke, which causes the cue ball to strike the top cushion and rebound some distance down the table.

Diagram 836 illustrates the stroke. Not only is it somewhat easier to gauge the strength required to obtain correct position when use is made of the top cushion, but in addition to this better position will result from a cushion stroke of perfect strength than from a stroke—also of perfect strength—which makes no use of the cushion. Reference to Diagrams 835 and 836 will show

why this is so. In both cases the after-position which has resulted from the pot is a very good one, for with the red on the spot and the object white right behind the spot the cue ball in its new position is very well placed for top-of-the-table play. In the after-position shown on Diagram 836 it will, however, be noticed that the cue ball is considerably nearer the object balls than in the one illustrated on Diagram 835, and as top-of-the-table cannons have to be played with great accuracy of contact and strength, a position is always a better one when the cue ball is pretty near the object balls than when it is at some distance from them—it being assumed, of course, that the angle for the cannon is about the same in both cases.

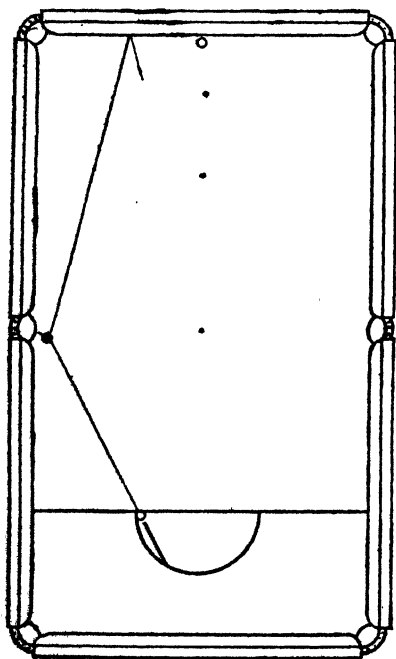


DIAGRAM 837.—An attempt to get position for top-of-the-table play by means of a centre-pocket pot. The cue ball has not rebounded a sufficient distance from the top cushion owing to the stroke having been played with too little pace, and the resultant position is a bad one.

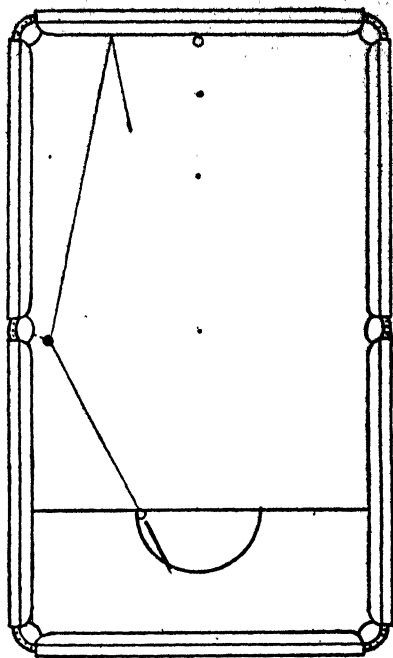


DIAGRAM 836.—Getting position for top-of-the-table play by means of a centre-pocket pot. A better stroke than the one illustrated on Diagram 835.

When playing the stroke illustrated on Diagram 836 care must be taken not to use too slow a stroke, otherwise the resultant position may be more or less like that shown on Diagram 837. The distance which the cue ball travels depends not only on the strength of the stroke, but also on the kind of contact which the cue ball makes with the red. With the red so near the pocket it can easily be understood that it can be potted by various kinds of contacts and also that the speed at which the cue ball travels after hitting the red ball depends upon how full or otherwise it has taken it.

Diagram 838 shows the pot played with too much pace to leave the desired position. When the cue ball travels as far down the table as indicated by the continuous line on the diagram it is generally owing to the contact with the red not having been sufficiently full, in

addition to the stroke having been played with too much pace.

This centre-pocket pot has to be played with very good strength in order to leave the best possible position, and consequently as a positional stroke it is not an easy one for ordinary players. Good players, however, seldom fail to get good position from the pot, for should the cue ball not come to rest in a favourable position for a cannon there will generally be a pot to fall back upon, though it may be at an angle which makes it a difficult stroke for all except really good players.

Diagram 839 shows the red once more over the centre pocket, but the object white instead of being behind the spot is now to the right of it. Here, good position for a cannon can quite easily be left, in fact all that is necessary to ensure an easy stroke for the next one is to play the pot with sufficient strength to cause the cue ball to rebound some considerable distance

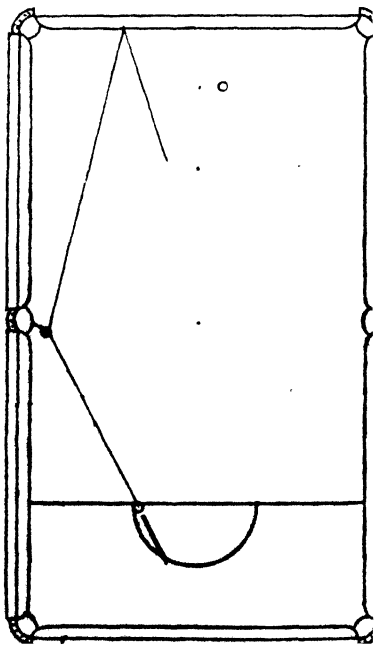


DIAGRAM 839.—A centre-pocket pot to leave top-of-the-table position.

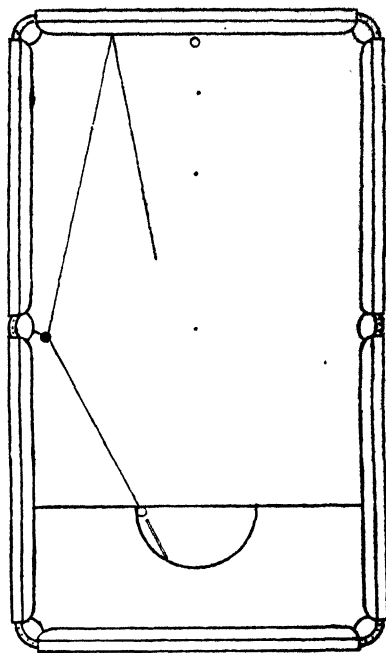


DIAGRAM 838.—An attempt to get position for top-of-the-table-play by means of a centre-pocket pot. The cue ball has rebounded too great a distance from the top cushion owing to the stroke having been played with too much pace, and the resultant position is a bad one.

from the top cushion so that it may come to rest at a point well below the spot. On the diagram the cue ball has rebounded from the top cushion nearly as far down the table as the pyramid spot, and the easiest of cannons is on for the next stroke. Were the pot, however, played with such bad strength that the cue ball travelled as far down the table as the centre pockets, or even to the baulk line, the resultant position would still present an easy cannon, though it would be far more difficult to retain good position by this cannon—owing to the cue ball being a long distance from the object balls—than it is when the cue ball comes to rest as shown on Diagram 839.

Diagram 840 shows the object balls

situated exactly as on Diagram 839, but illustrates a better positional stroke. By playing with plenty of running side the cue ball after striking the top cushion *crosses over* to the other side of the table, as indicated by the continuous line on the diagram. As the cue ball travels past the object balls, position for a cannon will be left, no matter whether it comes to rest a little higher up the table than the pyramid spot or at some point not far from the side cushion or at any point between these two extremes. The stroke—illustrated on Diagram 840—which leaves the cue ball at a comparatively short distance from the object balls is, however, a much better one than any stroke which causes it to travel a long way past them. The reason that the stroke illustrated on Diagram 840 is a better positional one than the one illustrated on Diagram 839 is because the crossing of the cue

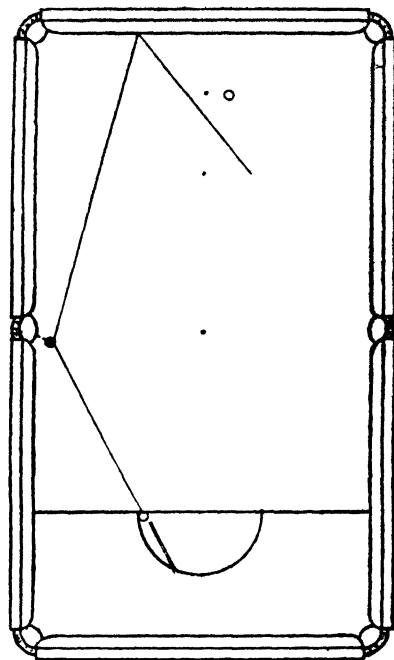


DIAGRAM 840.—A centre-pocket pot to leave top-of-the-table position. A better positional stroke than the one illustrated on Diagram 839.

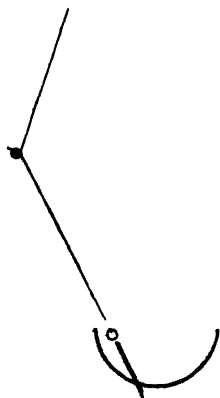


DIAGRAM 841.—A centre-pocket pot to leave top-of-the-table position.

ball to the other side of the table allows of the cannon being played in such a way as to drive the red forward—to leave a pot if necessary—whereas when, as in the stroke illustrated on Diagram 839, the cue ball does not cross over, the subsequent cannon cannot send the red to the pocket.

Diagram 841 illustrates a variation of the position shown on Diagrams 839 and 840. Here, with the object white to the left of the spot, the cue ball must remain on the left side of the table, for in this way the subsequent cannon will be from the white on to the red, and by means of such a stroke the red may be placed in position for a pot. The location of the object white also ensures good top-of-the-table position being obtained with certainty, for a pot by means of a half-ball stroke, or approximately half-ball

stroke, will cause the cue ball to travel with good direction right from the moment of its contact with the red until it comes to rest. The pot should, however, be played with sufficient pace to allow of the cue ball's travelling well up the table—as indicated by the continuous line on the diagram—in order that the subsequent cannon may be a short-range stroke.

Diagram 842 shows the object white right behind the spot and the red ball well situated for a centre-pocket in-off from the D. Here, the amateur's best game is to play to make a number of in-offs, for when at last, as the result of some incorrectly-played stroke—strength or contact, or perhaps both, having been somewhat at fault—the position of the red ball no longer allows of the in-off game being continued, the probability is that position for a drop-cannon will be left instead, and in this way the balls may be brought together at the top of the table. The player who plays the top-of-the-table game right up to the hilt, irrespective of whether it pays him to play it or not, does not, however, waste time by playing the in-off game with the balls in the position shown on Diagram 842. Instead he pots the red in the centre

pocket and, provided that he plays the stroke with good strength, obtains the desired position in one stroke. The continuous line on Diagram 842 indicates the very good position which may be obtained when very exact strength has been used for the pot. As the red ball is some distance from the pocket, accurate striking is necessary, otherwise the pot may easily be missed. With the cue ball spotted in the D as shown on the diagram the contact with the red has to be somewhat thinner than half-ball, and in strokes of this nature it is no easy matter to correctly gauge the strength at which the stroke must be played. The latitude which exists for correct strength is here only very small, and consequently none but very good players can regularly obtain correct position by means of this centre-pocket pot.

Diagram 843 shows the object balls situated exactly as on Diagram 842, and also illustrates the relatively bad position which may be set up as the result of a stroke which has been played with only just a little less strength than the one—illustrated on Diagram 842—which has resulted in a perfect leave. In the stroke illustrated on Diagram 843 the cue ball has come to rest about 11 inches from the top cushion, so that when the red is placed on the spot both balls will be nearly the same distance from the cushion—the centre of the spot is $12\frac{3}{4}$ inches from the cushion, consequently the red when on the spot is very nearly $11\frac{3}{4}$ inches from it. With the cue ball a little higher up the table than

DIAGRAM 842.—A centre-pocket pot to leave top-of-the-table position. Object white right behind the spot and close to the cushion. Red ball 11 inches from the side cushion and $34\frac{1}{2}$ inches from the baulk line. The red ball is well situated for an in-off.

the red, and the object white right behind the spot and close to the cushion, the cannon is a screw and top-of-the-table position cannot be retained by its means. The only stroke to retain position is a slow pot. Unless, however, a player is exceptionally good at potting, this particular pot is a difficult stroke.

Bad position is also set up when in playing the pot into the centre pocket the cue ball rebounds considerably farther from the top cushion than indicated on Diagram 842. Thus, in order to justify a refusal of the opportunity to score a number of in-offs from the red ball with this ball in the favourable position shown on Diagram 842, the player must by means of the pot obtain the position—or one very like it—indicated by the continuous line on



DIAGRAM 843.—The relatively bad position which may be set up as the result of just a slight want of pace when attempting to obtain the top-of-the-table position illustrated on Diagram 842. Red ball situated as on Diagram 842.

this diagram, and unless he can play the top-of-the-table game far better than the average good amateur, top-of-the-table position obtained by means of a perfect stroke will seldom indeed yield him as many points as he would in all probability have scored by means of the in-off game.

The top-of-the-table player is always seeking to get position for his favourite game, and a common method by which good players get the balls at the top of the table is by means of an in-off from the white which places this ball in the neighbourhood of the spot followed by a pot—generally into a centre pocket—from the D.

Diagram 844 illustrates a simple in-off from the white to leave this ball



DIAGRAM 844.—An in-off from the white sending the object ball to the immediate vicinity of the spot. The next stroke—the pot into the centre pocket—if correctly played gives top-of-the-table position.

close to the spot. A fullish contact is necessary, otherwise the ball will travel considerably lower down the table than the spot. This stroke is an easy one owing to the cue ball being so near the white. With the cue ball a considerable distance from the object ball the stroke becomes much less simple. The in-off is followed by a pot, the nature of which as regards pace and direction to be given to the cue ball depending, of course, upon the position which the object white takes up as the result of the in-off.

Diagram 845 shows an easy run-through in-off from the white played with correct strength to leave the object ball close to the spot. By means of the next stroke—a pot from the D—position for top-of-the-table play is at once set up.



DIAGRAM 845.—A run-through in-off from the white sending the object ball to the immediate vicinity of the spot. Top-of-the-table position is obtained by the next stroke—the pot into the centre pocket.

Diagram 846 illustrates an in-off from the white into a top pocket by means of a thin stroke. The thin contact cuts the object ball away from the side of the table, and when the strength of the stroke is very good the ball may come to rest right behind the spot—as indicated by the intersected line on the diagram. Position for top-of-the-table play is afforded by the next stroke—a pot from the D.

Diagram 847 shows position for an easy in-off from the white, with the red well placed for a pot from the D for the next stroke. By means of a good-strength stroke the object white can be placed behind the spot—as indicated by the intersected line on the diagram—and thus position may be obtained in two strokes.

white placing the object ball behind the spot. The next stroke—the pot into the centre pocket—allows of position being obtained for top-of-the-table play.

Diagram 848 further illustrates how top-of-the-table position may be obtained by means of an in-off from the white into a centre pocket, followed by a pot. In order to place the object white behind the spot the in-off must be played by means of a very full run-through stroke. Unless the side cushion is taken at no great distance from the pocket the object ball cannot take up a position behind the spot.

Diagram 849 illustrates a thin in-off from the D played with sufficient pace to cause the object white to travel to the top of the table. When the contact is correct the object ball travels towards the centre of the top cushion—as indicated by the intersected line on the diagram—and thus when the strength is also good the ball may be placed behind the spot. A pot from

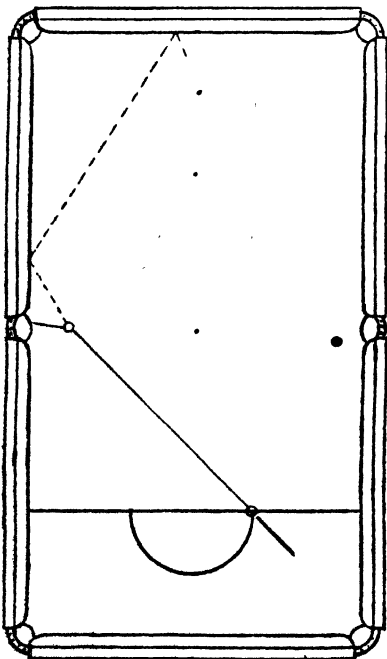


DIAGRAM 848.—A run-through centre-pocket in-off from the D placing the object white behind the spot. Position for top-of-the-table play may be obtained by means of the pot which follows the in-off.

DIAGRAM 847.—A centre-pocket in-off from the white placing the object ball behind the spot. Position for top-of-the-table play may be obtained by means of the next stroke.

the D, following a well-played in-off, sets up top-of-the-table position.

Diagram 850 once more illustrates how position for top-of-the-table play may be gained in two strokes, viz., by an in-off from the white followed by a pot. The in-off from the white is here the easiest of strokes, and in addition to this it is quite easy to place the object ball behind the spot, for a stroke which is just slightly fuller than half-ball will give it a good line of travel.

Diagram 851 illustrates one of the very best positions that a player can possibly have, for both balls are splendidly situated for centre-pocket play from the D. The player who understands the theory of the in-off game—as explained in the chapters on CENTRE-POCKET IN-OFFS and TOP-POCKET IN-OFFS—and who can play long top-

pocket in-offs with ease and certainty, commences with the red and continues with this ball until it no longer presents an ordinary in-off. Then, and not till then, does he fall back on the white, and with its assistance he is generally able in two or three strokes to bring the red into play again. The capable top-of-the-table player who is always striving to get the balls at the spot end of the table will, on the other hand, often enough immediately sacrifice an in-off position like the one illustrated on Diagram 851 which is so full of potentialities for a good score by means of the in-off game, for the more alluring one into which it may by a couple of strokes be resolved. He first sends the white to the vicinity of the spot, and then by means of a well-played pot obtains a

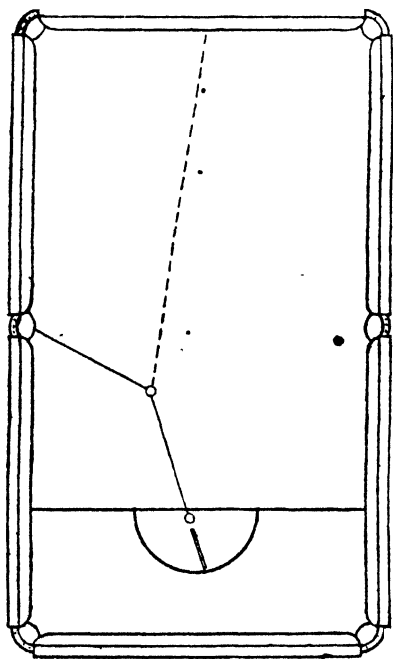


DIAGRAM 850.—A centre-pocket in-off from the D placing the object white behind the spot. Top-of-the-table position may be obtained by means of the pot which follows the in-off. Object white 20½ inches from the side cushion and 50 inches from the baulk cushion.

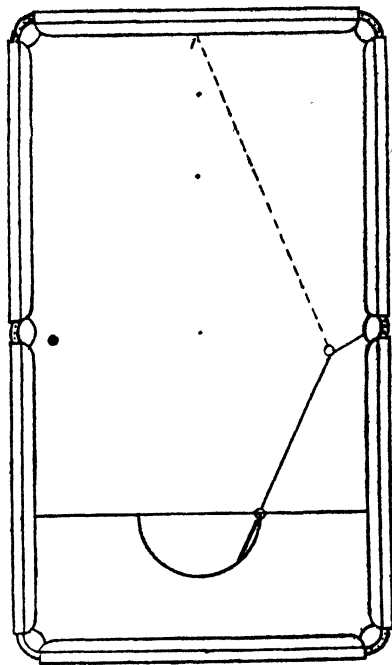


DIAGRAM 849.—A thin centre-pocket in-off from the D placing the object white behind the spot. By means of the pot which follows the in-off, position may be obtained for top-of-the-table play. Object white 6 inches from the side cushion and 37 inches from the baulk line.

commanding position at the top of the table.

Diagram 852 illustrates a stroke often played by good players when it can be followed by a pot from the D. This in-off is quite simple just as a stroke, but in order that the object white may travel as indicated by the intersected line on the diagram a very accurate stroke is necessary, and the strength has also to be nicely gauged in order that the ball may come to rest close to the top cushion. The in-off can be made by many different kinds of contacts, and consequently the

lines of travel. When the cue ball is near the object ball accuracy of con-

tact entails nothing more than a little care, nor does the gauging of correct pace present any great difficulty to a fair player in a short-range ordinary in-off. In long-distance strokes of the nature of the one illustrated on Diagram 852 correct contact demands a very true stroke, and only by extreme accuracy of contact, in combination with good strength, can the object white be made to travel as indicated by the intersected line on the diagram.

Diagram 853 illustrates another stroke to place the object white behind the spot, or in its vicinity, which is often played by good players when this in-off can be followed by a pot from the D. The cue ball is spotted to allow of a fast stroke being used, for the object

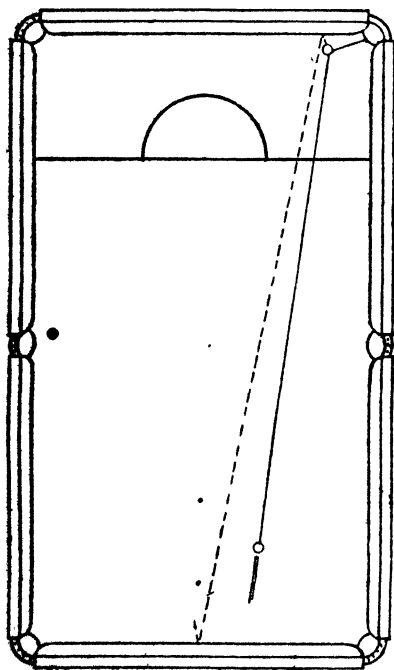


DIAGRAM 852.—An in-off from the white into a baulk pocket placing the object ball behind the spot. Cue ball 20 inches from the top cushion and 24 inches from the side cushion. Object white $3\frac{1}{2}$ inches from the baulk cushion and 8 inches from the side cushion.

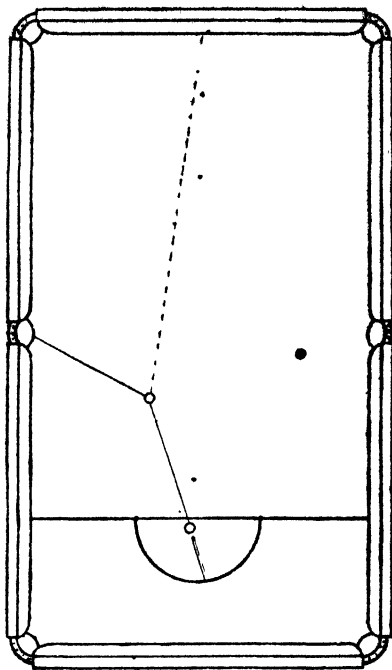


DIAGRAM 851.—A perfect position for the in-off game. Red ball $13\frac{1}{2}$ inches from the side cushion and $33\frac{1}{2}$ inches from the baulk line. Object white 26 inches from the side cushion and $51\frac{1}{2}$ inches from the baulk cushion. This in-off position may be resolved into top-of-the-table position by means of an in-off which places the object white behind the spot, followed by a centre-pocket pot.

white has to travel two lengths of the table. It is not an easy matter to cause the object white to come to rest in the vicinity of the spot, for not only has the strength of the stroke to be very nicely gauged to ensure this, but a very accurate contact is also necessary. This stroke varies considerably on different tables owing to the angle of rebound which results from a strong impact being very different on a table with very resilient cushions from what it is on a table with slow, hard cushions.

Diagram 854 illustrates what may happen in an extreme case on a table with very resilient cushions. The

object white, by reason of the force with which it strikes the cushion, is momentarily pressed into the nose of the cushion, and this results in the angle of rebound being very much squarer than would be the case with a less forcible contact. Not only this, but the cushion, in throwing off the ball, gives it a twist, and this twist or spin strongly affects the angle of reflection off the baulk cushion. The side imparted to the ball by the top cushion is running side, and as the ball travels direct from the top cushion to the baulk cushion, this side acts as check side off the baulk cushion.

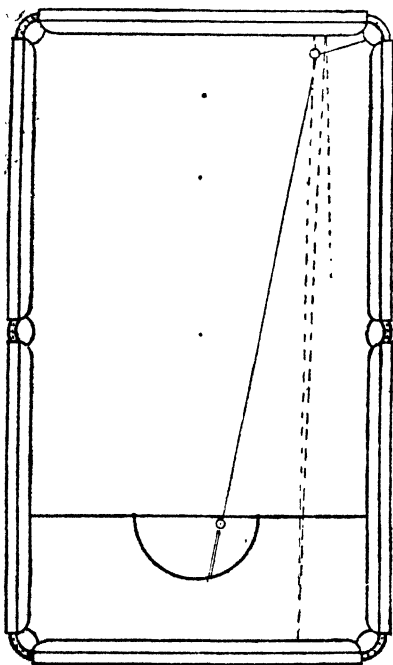


DIAGRAM 854.—An example of cushion-imparted side. The in-off has been played with plenty of pace and the object ball striking the cushion at an angle approaching a right angle is thrown off very squarely. The effect of the imparted side is shown by the angle of rebound off the baulk cushion. On tables with very resilient cushions the alteration from the normal angle of rebound is often very much more pronounced than is the case on this diagram.

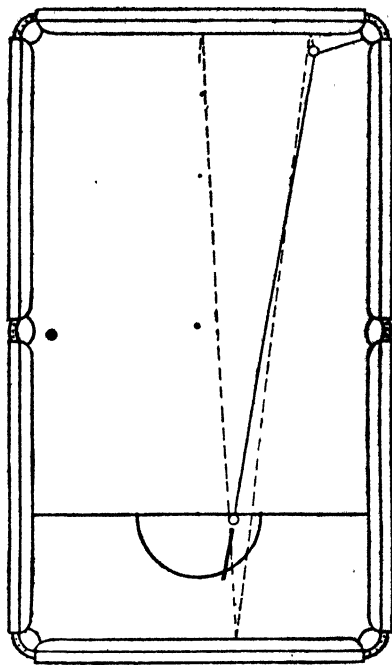


DIAGRAM 853.—A fast in-off from the white causing the object ball to come to rest behind, or in the vicinity of the spot after having travelled two lengths of the table. Object ball 3 inches from the top cushion and 9 inches from the side cushion.

When playing the stroke illustrated on Diagram 853 on a table with very resilient cushions, allowance must therefore be made for the alteration from the normal angle of rebound which takes place with fast strokes. The eccentric angling illustrated on Diagram 854 can be avoided by taking the object ball a shade less full than in the stroke which causes this angling.

In the positions already illustrated, either one or two correctly played strokes lead immediately to top-of-the-table play. Positions often occur, however, which necessitate the playing of three clearly-defined strokes in order that good top-of-the-table position may be obtained.

Diagram 855 illustrates one of these positions. A gently-played thin in-off

from the white leaves this ball in position for another in-off into the same pocket, the second in-off sends the white to the spot, and the third stroke—the pot into the centre pocket—sets up top-of-the-table position.

Diagram 856 shows another placing of the balls from which top-of-the-table position may be obtained in three strokes. The first stroke is a gentle in-off from the red to leave this ball in position for a pot from the D. This is followed by an in-off from the white which sends the object ball to the vicinity of the spot, and the pot into the centre pocket gives the desired position.

Diagram 857 shows a position which occasionally occurs. Here the only stroke to play is the in-off from the red



DIAGRAM 855.—A gentle thin in-off from the white into a centre pocket leaving the object ball well placed for an in-off from the D. Top-of-the-table position is then gained by an in-off which places the object white behind the spot, followed by a centre-pocket pot.

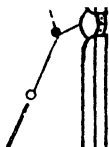


DIAGRAM 856.—A gentle thin in-off from the red leaving the object ball in position for an easy pot from the D. The next stroke is a centre-pocket in-off from the white to pot from the D. This is followed by an in-off from the white which sends the object ball to the vicinity of the spot, and the pot into the centre pocket gives the desired position.

ball. This in-off can be played in more than one way—that is with different strengths—according to the after-position desired. When the object white is near the spot—or so placed in relation to a centre pocket that it can be sent to the vicinity of the spot by means of an ordinary centre-pocket in-off played from the D—this in-off affords a means of obtaining top-of-the-table position at once, for by playing the stroke quite gently the red may be left over the pocket. Another correct stroke—or two strokes when the white has to be sent to the neighbourhood of the spot—may be played.

Diagram 858 shows position for a pot from the D. This pot cannot be

called a difficult stroke, but pots into a top pocket from the D are never very easy unless the ball is quite close to the pocket. When a player plays for nothing else than the pot the stroke is, of course, much less difficult than when he plays to obtain good position as the result of the stroke. With the object white situated as shown on the diagram perfect top-of-the-table position may be obtained as the result of a well-played pot. The continuous line on the diagram indicates the distance which the cue ball should travel after its contact with the red in order to leave it well placed for the cannon which should follow the pot. A very good stroke is, however, required in order that perfect position may result from it. Should the cue ball travel considerably farther than as indicated by the continuous line on

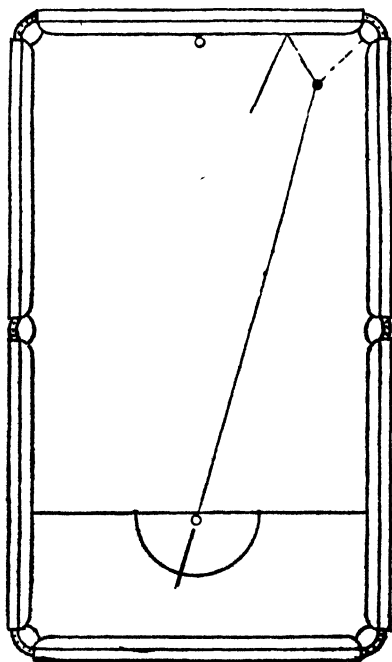


DIAGRAM 857.—A very gentle in-off from the red leaving the object ball quite close to the pocket. By means of a well-played pot from the D, top-of-the-table position may then be set up. Red ball on the lower angle of the pocket. Object white behind the spot.

DIAGRAM 858.—A pot from the D to set up top-of-the-table position. Red ball 8 inches from the side cushion and 11 inches from the top cushion. Object white behind the spot.

the diagram the after-position may be anything but good, and, on the other hand, should the length of its rebound from the top cushion be considerably less than as indicated on the diagram the cannon which will be left, though possibly quite easy just as a stroke, will very likely be of such a nature as not to permit the retention of top-of-the-table position by its means. It is true that should the cue ball not rebound a sufficient distance from the top cushion to leave correct position for a top-of-the-table cannon—that is to say, for a cannon which gives further top-of-the-table position—it may be quite possible to retain the position by means of a pot, but the pot may be anything but an easy stroke, especially when the cue ball is a little

nearer the top cushion than the red ball on the spot.

Diagram 859 illustrates how perfect top-of-the-table position may sometimes be obtained by means of a long stab pot. The stroke is not an easy one, and though any fair player may occasionally get such a shot, only a really good player can be tolerably certain of potting a ball by a stab when the cue ball is a long way from the object ball.

Diagram 860 shows the red ball right over a top pocket and also illustrates the correct way of playing the pot when, with the object white right behind the spot, the player desires to set up a top-of-the-table position. With the balls situated as shown on Diagram 860 most players pot the red by a direct stroke, but such a stroke allows of very little latitude as regards

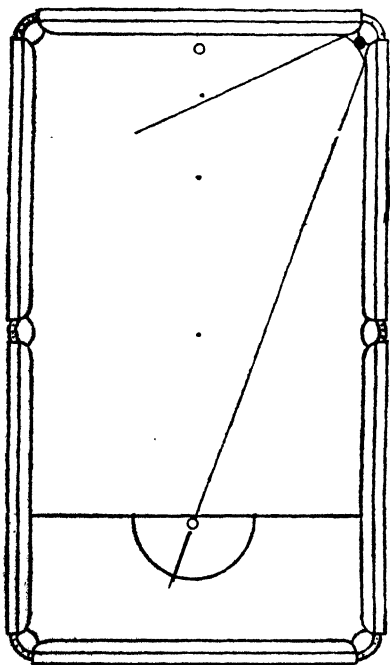


DIAGRAM 860.—A cushion-pot from the D to set up top-of-the-table position. Red ball on the brink of the pocket. Object white behind the spot.

DIAGRAM 859.—A stab pot to set up top-of-the-table position. Red ball 17 inches from the side cushion and 21 inches from the top cushion, cue ball on the line between the centre pockets and in a dead straight line with the red ball and the corner pocket. Object white behind the spot.

the distance which the cue ball must rebound from the top cushion in order to get position for a *top-of-the-table* cannon. With the red right over the pocket it can be potted by practically any kind of contact, but two strokes played with exactly the same strength will give very different results as regards the distance which the cue ball will rebound from the top cushion when the contact with the red ball is appreciably different in one case from what it is in the other. In fact, even slightly different contacts will give different results, for the cue ball will travel farther when the red ball is taken less than half-ball than it will when it is taken half-ball or fuller than half-ball. When the pot is played by a direct stroke the cue ball has to travel a

very exact distance in order to leave the best possible position, and a difference of only a few inches in the length of its rebound from the cushion may make all the difference between a good after-position and a very indifferent one. Playing from the distance of the D it is very difficult to ensure an *exact* contact—especially when using a slow stroke—and consequently a stroke the strength of which was quite correct for the contact which was intended may easily yield a very different result than the one played for. The better way of potting the red is by means of the cushion stroke illustrated on the diagram. The cushion should be struck just in advance of the red and a plain-ball stroke should be used. When the stroke is played in this manner the cue ball will rebound from the top cushion more or less as indicated by the continuous line on the diagram, and if the strength of the stroke has been at all good it will cross to the other side of the table. The great superiority of this cushion-pot over the direct stroke lies in the fact that *no exact strength* or exact contact is necessary in order to ensure good after-position. Provided that the cushion is taken close up to the

red the cue ball's line of travel will be very similar to the one shown on the diagram, and when this is the case its length is of secondary importance. In the stroke illustrated on Diagram 860 the cue ball has travelled about 15 inches past the spot, but just as good top-of-the-table position would have resulted from the pot had the cue ball—travelling on the line shown on the diagram—only travelled say 6 or 8 inches past the spot, and on the other hand had it travelled 10 or 12 inches farther than indicated on the diagram the resultant position would have been practically the same as that indicated on the diagram.

Diagram 861 illustrates how top-of-the-table position may often be obtained by means of a cannon followed by a pot. In order to obtain the desired position by means of these two strokes the cannon has to be very correctly played, for not only must the object white be sent to the vicinity of the spot, but the cue ball must take the red in such a way that a pot is left for the next stroke. With the balls situated as shown on Diagram 861 the cannon is a simple enough stroke, and the placing of the object white somewhere near the spot also should present no difficulty to any fair player. Correct contact with the second object ball is, however, quite

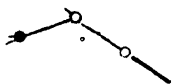


DIAGRAM 861.—A run-through cannon sending the object white behind the spot and placing the red in position for a centre-pocket pot. A correctly-played stroke leads to top-of-the-table position by means of the pot which follows the cannon. Red ball on the line between the centre pockets and 23 inches from the centre pocket. Object white 42 inches from the baulk line and 201

inches from the side cushion. Cue ball 24½ inches from the side cushion.

stroke is necessary to ensure the contact with the second object

when a cannon is a run-through, and a stroke is always more difficult when playing to leave *both* object balls well placed than it is when the after-position of only one of the object balls has to be considered. When in the position shown on Diagram 861 the cannon does not leave the red well situated for a pot an in-off may be left instead, and when this is the case position for a drop cannon can generally be set up by means of another stroke or two, and the drop cannon—when properly played, of course—leaves all the balls at the top of the table.

Diagram 862 shows another situation of the balls from which top-of-the-table position may be gained in two strokes. The cannon is a run-through stroke and is quite easy just as a stroke, but in order to cause the object white to travel to the vicinity of the spot considerable pace must be used, and in addition to this the object white must be taken very accurately in order that it may be given a correct line of travel. Also, as the red has to be dribbled to the pocket, the cue ball must travel to it without much pace, and a run-through stroke which has to be played without much run on the cue ball and yet with sufficient pace to cause the first object ball to travel a long distance, is always a much more difficult stroke than an ordinary run-through. In the stroke under discussion four things are necessary in order that it may be a perfect one, viz., the object white must travel to the top of

the table, it must travel with good direction, the cue ball must travel to the red without much pace and its contact with it must be of such a nature that an easy pot is left to continue with. In playing this stroke a bad contact with the red will often leave very poor position, and when the red is badly placed for the next stroke, the position of the white behind the spot as the result of a good-strength stroke and good contact so far as this ball is concerned only makes matters worse. The most essential thing in the stroke, therefore, is to make a good contact with the red. When the red is taken well the after-position will often present the choice of a pot or of an in-off, and the position of the object white will then determine which is the better stroke to play.

Diagram 863 illustrates a position which is typical of positions which often occur in the upper half of the table, and which, whilst not top-of-the-table positions themselves, lead to them by one correctly-played stroke. With the balls to the measurements given under the diagram the cannon is the easiest of strokes, but in order to leave the red well placed for the next stroke the cannon

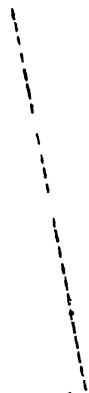


DIAGRAM 862.—A run-through cannon driving the object white to the vicinity of the spot and placing the red close to the pocket for an easy pot. A difficult stroke. When the stroke is correctly played top-of-the-table position may be obtained by means of the subsequent pot. Red ball $\frac{1}{2}$ inch from the side cushion and 12 inches from the baulk cushion. Object white on the baulk line and $5\frac{1}{2}$ inches from the side cushion. Cue ball 3 inches from the side cushion and 40 inches from the baulk cushion.

must be a run-through stroke. If the stroke is played with good strength the red ball will travel more or less as indicated by the intersected line on the diagram, and if in addition to this the cue ball takes the object white correctly this ball may be placed somewhere near the spot. The essential thing in the stroke is to place the red in position for a pot, for it will avail little to have the object white near the spot if the cannon cannot be followed by a pot.

Diagram 864 illustrates a variation of the stroke shown on Diagram 863. The location of the balls is exactly the same on both diagrams, but whereas on Diagram 863 the red is placed in position for a pot into the *right* top pocket as the result of a medium-pace stroke, in Diagram 864 the red is sent to the vicinity of the *left* top pocket by means of a fairly fast stroke. In order to give the red the good line of travel



DIAGRAM 863.—A run-through cannon to leave top-of-the-table position. Red ball 26 inches from the side cushion and 44 inches from the top cushion. Object white 26 inches from the side cushion and exactly between the cushion and the pyramid spot. Cue ball 17 inches from the side cushion and $5\frac{1}{2}$ inches from the top cushion.

indicated by the intersected line on Diagram 864 the cue ball has to take it a shade less full than in the stroke illustrated on Diagram 863. This stroke to send the red to the vicinity of the left pocket although it often leaves splendid position, is not as sound as the one illustrated on Diagram 863, owing to the faster pace at which it has to be played. Generally speaking, the faster a stroke has to be played the more difficult it is to control the running of the balls, and when playing to send the red to the vicinity of the left pocket too fast a stroke or too slow a stroke may easily leave this ball badly placed for the next one. Also, in playing to double the red across

DIAGRAM 864.—A cannon to leave top-of-the-table position. A variation of the stroke illustrated on Diagram 863. All three balls situated exactly as on Diagram 863.

THE STROKES OF THE GAME.

the table to the corner pocket the ball may enter the pocket. When this happens, unless the object white has been placed somewhere near the spot as the result of the cannon the resultant position may easily be a bad one.

Diagram 865 illustrates how top-of-the-table position may often be obtained from a simple cannon when the stroke is played at correct strength, and when in addition to this the cue ball makes a good contact with *both* balls. With the balls to the measurements given under the diagram the cannon cannot well be missed, and when the cue ball cannons very full on to the red the after-position which results from a good-strength stroke may be something like that indicated by the intersected

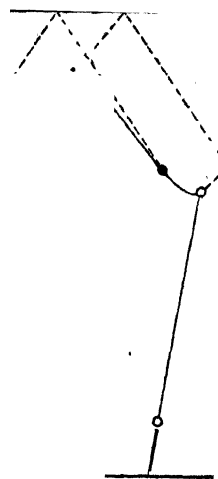
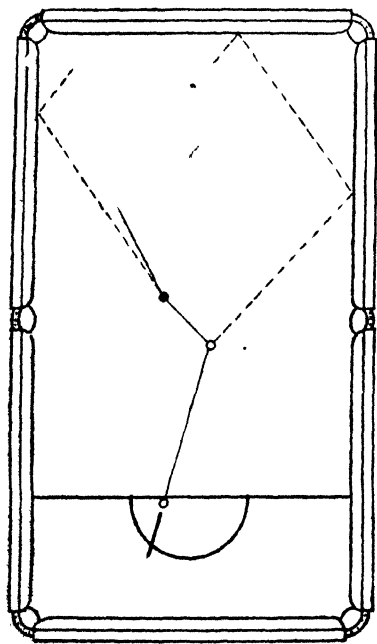


DIAGRAM 865.—An ordinary ball-to-ball cannon sending the object white to the vicinity of the spot and placing the red in position for a pot. Red ball 11 inches from the side cushion and $40\frac{1}{2}$ inches from the top cushion. Object white 5 inches from the side cushion and 47 inches from the top cushion. Cue ball 13 inches from the side cushion and 41 inches from the baulk cushion.



AM 866.—An ordinary ball-to-ball cannon sending the object white to the vicinity of the spot and placing the red in position for a pot. Red ball $45\frac{1}{2}$ inches from the baulk line and 29 inches from the Object white 31 inches from m and $31\frac{1}{2}$ inches from the baulk line.

lines on the diagram. That is to say the object white will very likely be in the vicinity of the spot and the red well placed for a pot. By means of a slightly slower stroke than the one shown on the diagram good position for a cannon can also be left, provided that the cue ball, though cannoning very nearly full on to the red, takes it slightly on the inside.

Diagram 866 shows position for a simple ball-to-ball cannon from the D. Here again a well-played stroke sends the object white to the vicinity of the spot and places the red ball in position for a pot. In order that the red may be given a good line of travel the cue

ball must cannon very nearly full on to it.

Diagram 867 illustrates the gaining of top-of-the-table position by means of a cushion cannon. With the red ball to the measurements given under the diagram a long top-pocket in-off is on from the D, but a top-pocket in-off is never quite a certainty even with good players when the object ball is as low down the table as the centre pockets, consequently a cannon off the side cushion is a sound stroke here. A thin-nish contact with the red is necessary, and right-hand side must be used, as this side is running side off the cushion. As the stroke must be played without much pace, drag should be used in com-

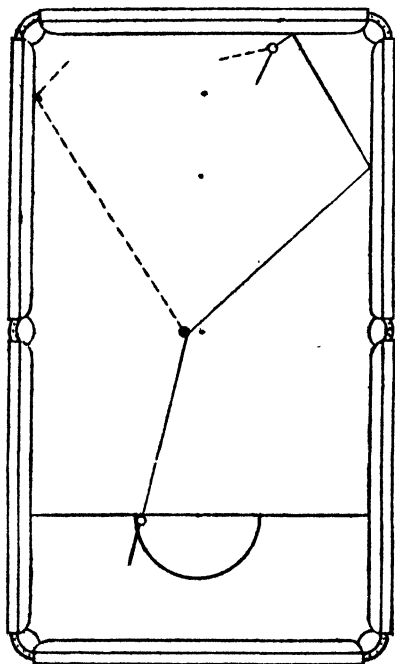
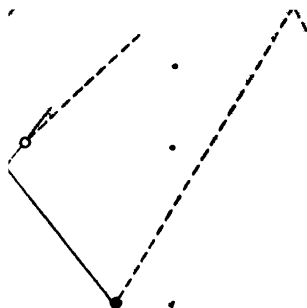


DIAGRAM 868.—A cannon off the side cushion sending the red to the vicinity of the corner pocket and the object white to the vicinity of the spot. Red ball on the line between the centre pockets and 30½ inches from the brink of the left pocket. Object white 3 inches from the top cushion and 19 inches from the side cushion.



DIAGRAM 867.—A cannon off the side cushion sending the red ball to the vicinity of the corner pocket and the object white to the vicinity of the spot. Red ball on the line between the centre pockets and 21 inches from the brink of left pocket. Object white 3½ inches from the side cushion and 33 inches from the top cushion.

bination with the side. A good contact with the object white will cause this ball to travel to the neighbourhood of the spot, and when the white comes to rest in this favourable location, top-of-the-table position may be set up by means of the pot which should follow the cannon. As, however, it is very difficult to ensure correct contact with the white, the essential thing in the stroke is to send the red up to the pocket. When the red is well placed for the next stroke the break can be continued even though the object white may not have been taken at all as intended. Often as the result of this cushion cannon position for an easy cannon off the white on to the red — be left for the next stroke.

Diagram 868 illustrates a variation of the stroke shown on Diagram 867. Here again the red is in position for a top-pocket in-off, but owing to its being so low down the table a good game to play is a cannon off the side and top cushions. The stroke must be played with left side and a thinnish contact with the red is necessary in order that this ball may travel to the vicinity of the pocket. Top-of-the-table position may be set up by a stroke which in addition to sending the red to the vicinity of the pocket places the object white near the spot. It is, however, very difficult to insure the cue ball's taking the object white in such a way as to place it near the spot, but it is a moderately easy stroke to send the red

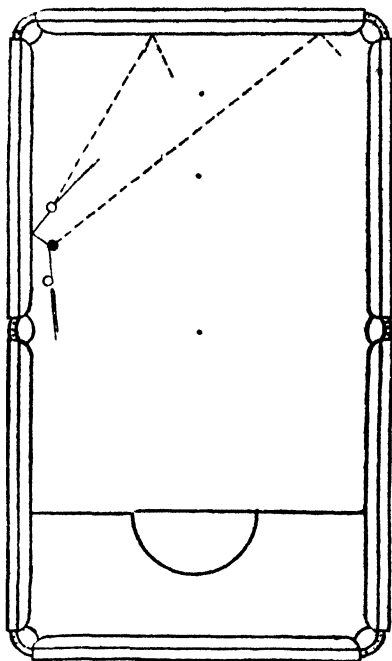


DIAGRAM 869.—A cannon off the side cushion sending the red to the vicinity of the corner pocket and the object white to the vicinity of the spot. An alternative stroke—and the one generally played—is a gentle cannon to keep the balls together. Red ball $3\frac{1}{2}$ inches from the side cushion and $54\frac{1}{2}$ inches from the top cushion. Object white $3\frac{1}{2}$ inches from the side cushion and 46 inches from the top cushion. Cue ball $2\frac{1}{2}$ inches from the side cushion and $62\frac{1}{2}$ inches from the top cushion.

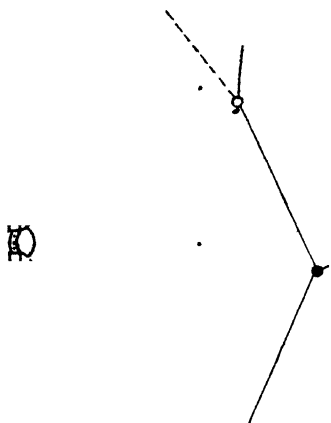


DIAGRAM 870.—A five shot by means of which top-of-the-table position may be set up. Cue ball $8\frac{1}{2}$ inches from the side cushion and $60\frac{1}{2}$ inches from the baulk cushion. Object white $23\frac{1}{2}$ inches from the side cushion and 38 inches from the top

to the pocket, and a successful stroke—quite independently of whether it sets up top-of-the-table position or not—will leave the red in position for a pot or possibly for an in-off. In addition to this a good-strength stroke will often leave position for an easy cannon.

Diagram 869 illustrates a bold stroke to obtain top-of-the-table position. With the balls to the measurements given under the diagram a well-played gentle cannon off the cushion will leave the balls well placed for another cannon of such a nature that further good position can be obtained by its means. The

location of the balls illustrated on the diagram, however, enables a capable player to at once set up position for top-of-the-table play. A fast thin stroke cuts the red to the pocket and a good contact with the object white sends it to the vicinity of the spot. As the cue ball is quite near the red it is easy to insure the thin contact which is necessary to cut it to the pocket, and as the object white is only a short distance above the red it is also no very difficult matter to get correctly on to this ball. The player judges the point on the cushion which the cue ball will strike as the result of a thin contact with the red and then gauges the amount of side which must be used in order to cause it to get correctly on to

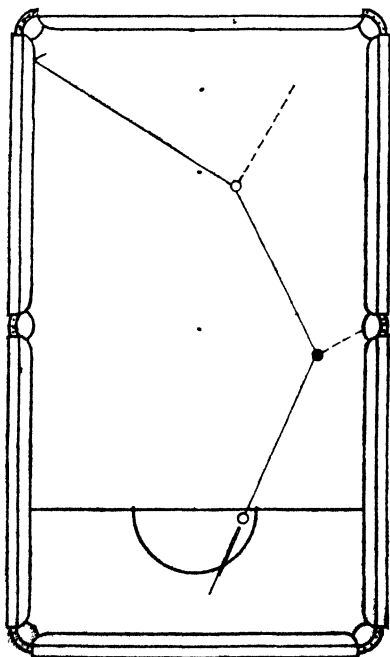


DIAGRAM 872.—An illustration of the bad position which may be set up as the result of a five shot when the stroke is played with too much pace, and when in addition to this the cue ball takes the object white less than half-ball to the left. Position of the object balls exactly as on Diagram 870.

DIAGRAM 871.—An illustration of the bad position which may be set up as the result of a five shot when the stroke is played with too much pace, and when in addition to this the cue ball takes the object white less than half-ball to the right. Position of the object balls exactly as on Diagram 870.

the object white. The pace of the stroke has, of course, to be well judged, but with a capable player this is no difficult matter.

Diagram 870 illustrates the manner in which top-of-the-table position may often be set up by means of a five shot. With the average amateur, however, a five shot more often destroys good position than sets it up. The reason of this is that very accurate contact with the second object ball is necessary to insure good after-position. With the balls in the position shown on Diagram 870 the idea of the stroke is to send the object

order that when the red ball is spotted the position may present an cannon. Looking at the diagram it may

a simple enough stroke to drive the white up to the spot, but the stroke is not quite as easy as it appears to be. In order that the white may travel up to the spot, the cue ball has to take it full or nearly full, but as often as not the fairly good amateur when playing this particular kind of five stroke catches the object white too much to the right or the left and thus fails to send it to the neighbourhood of the spot. Examples of the bad position that may easily be set up when in addition to too much pace having been used for the stroke the cue ball takes the object white less than half-ball to the right or left are illustrated on Diagrams 871 and 872, from actual strokes made on the table, and these could, of course, be almost indefinitely multiplied.

CHAPTER XLII.

TOP-OF-THE-TABLE PLAY.

Top-of-the-table play! How many have striven to become proficient at this most fascinating branch of the game; how few have ever attained any high degree of proficiency. Although, of course, the leading professional players *know* practically everything that is known concerning top-of-the-table play not all of them can *play* this difficult branch of the game sufficiently well to depend upon it for the bulk of their scoring, and consequently although these players who play the all-round game in which in-offs so largely predominate occasionally score a moderate number of points at the spot end of the table, they are not constantly sacrificing good position in order to get there, nor do they when there attempt the more or less difficult positional strokes which a retention of top-of-the-table play so frequently demands, when by means of quite a simple stroke they can ensure very good position for the ordinary game.

With amateurs who can play the top-of-the-table game to a certain extent the case is, as a rule, quite different. There are many good amateurs who often score twenty or thirty points by top-of-the-table play and who on rare occasions are able to make a fifty or a sixty break without leaving the spot end of the table. Players of this calibre, as a rule, sacrifice everything to top-of-the-table play, both as regards getting position for it and retaining it. Indeed, such players often go out for strokes, by means of which if perfectly played the top-of-the-table game may be continued, which are so difficult that Stevenson himself would decline to attempt them. As a consequence of their obsession for top-of-the-table play these amateurs are constantly beaten by men who are no better than they are at the ordinary game and often not as good. It is an undoubted fact that the player who can only very occasionally indeed make a fifty break at the spot end of the table loses far more than he gains by laying himself out for top-of-the-table play on every possible occasion. At rare intervals he has the glory of a fifty or sixty break compiled in more or less professional style, and often enough he may make between twenty and thirty before breaking down. But think of the numberless dismal failures, the fifteens and eighteens, the tens and twelves, even the sevens and eights which so often are all the points he scores before he loses position and has to face some awkward location of the balls which, although it may present an easy enough cannon, is of such a nature that the after-position which results from it may very easily be bad. Think also of the numberless times when after having scored but a few points he leaves the red on the brink of the pocket—the result of an attempt at a more or less difficult pot which, without having attained the proficiency of noted top-of-the-table players, he has been compelled to play in order to retain the desired position. Even when he scores twenty or thirty before leaving the red over the pocket he seldom gains anything from his break, for his opponent more often than not scores as many or more from the good opening with which he is presented, and when, as so often happens, the breakdown occurs before he makes a dozen or fifteen his failure is almost certain to give any opponent who is playing him level a big advantage over him.

Amateurs who constantly play the top-of-the-table game often argue that by playing this game right up to the hilt on every available occasion can

ever hope to become really proficient at it, and that though to-day they may constantly lose games by reason of their sacrificing so much for it, the time is bound to come when their proficiency at the spot end of the table will be of inestimable advantage to them. To many such a contention may appear quite a sound and logical one, but when we go more deeply into it we are forced to the conclusion that this is not so. Let us take Harverson and Inman, two of our leading professionals, who whatever they may do in the future do not to-day (1912) make very much use of top-of-the-table play. No one doubts that either of these professionals can play the top-of-the-table game far better than the good amateur who every now and then makes a three-figure break. We can also safely assume that neither of these professionals can play this game nearly as well as Stevenson, for could they do so they would make much more use of it in their games. Harverson to-day is undoubtedly inferior to Stevenson, yet were he as good as Stevenson at top-of-the-table play he in all likelihood would be his superior at billiards. Harverson is considerably older than Stevenson, and many years ago used to play him level. He watched him rise and rise until he became our first player and he recognised all the time that Stevenson owed his position almost entirely to his skill at the top of the table. It seems logical enough to assume that Harverson—and not only Harverson but many another professional as well—must have practised top-of-the-table play most assiduously until he found that he could not get beyond a certain point. In billiards as in other things there is a limit to what any man can do no matter how much he may practise. There are hundreds of markers in Great Britain who regularly make three-figure breaks and many of them occasionally pass the second hundred, but few, very few of these will ever become very much better than they are to-day. Now and then we get phenomenal boy players, and some of these—not all—in time become great players.

The amateur who argues that he has only to keep on playing the top-of-the-table game to become really proficient at it argues from an unsound basis, for unless he happens to possess in a particularly marked degree that aptitude and that indefinable something for billiards which are found in the great players he may go on practising all day long for years without reaching any very high standard of play. Few amateurs, too, can devote to billiards anything like the time which the leading professionals gave to the game in their youthful days, and unless a player, even though possessed of a great natural aptitude for billiards, can give years to the constant practice of the game he will never become sufficiently capable at the top-of-the-table game to be able to score more by this method of play than by the ordinary game.

Top-of-the-table play! How good it is to look upon. How fascinating it is to watch some brilliant exponent of this game rapidly piling up a big break by its agency. How simple it all looks. Cannon, pot, pot, cannon, pot, cannon, pot, pot; as easy as A B C almost it seems. But how deceptive appearances are, for the top-of-the-table game is full of pitfalls and snares. The cannons have to be played with such good strength and the cue ball must take both object balls so correctly. The red ball has to be potted at various speeds and by all kinds of strokes in order that the cue ball may take up correct position for the next stroke. Angle pots must present no more difficulty to the player than ordinary straight ones. It is not sufficient to be able to pot a ball nine times out of ten in any of the various positions which occur at the top of the table. A player must be able to pot it forty-nine times out of fifty in order to be able to make big breaks by top-of-the-table play. Covers, too, must be avoided, yet though a

player when playing some particular stroke often clearly recognises the danger of the stroke resulting in a cover, how frequently does he get the very cover he attempted to avoid?

Notwithstanding the fact that amateurs who cannot devote their whole time to billiards may never hope to attain a very high standard of proficiency at the top-of-the-table game, a knowledge of this fascinating method of play must be of inestimable value to their game provided that everything else is not sacrificed for it, and provided also that with some easy stroke on, which gives further good position—though ending top-of-the-table play—they do not play a much more difficult or uncertain stroke—as regards the after-position if not the stroke itself—in order to remain at the top of the table.

The various positions which occur at the top of the table and which are called top-of-the-table positions* may be broadly divided into two classes, viz., those in which the only correct stroke to play is a stroke to leave further top-of-the-table position, and those in which the player has the choice of either playing a stroke by which top-of-the-table position may be retained, or a stroke which ends top-of-the-table play and causes him to revert to the ordinary game. When the player has the choice of either kind of game it may be that the red is so positioned that it presents either an awkward pot or a run-through, or the alternative strokes may be either a pot by a thin cut or quite a simple in off, or again, the red ball, by reason of its being quite close to the pocket, may offer the player the choice of getting position for a cross in-off or for a cannon. It is in these positions with the choice of two different strokes that so many good amateurs make the mistake of playing to retain top-of-the-table position. When the position, though presenting the two methods of play, is of such a nature that the stroke to retain top-of-the-table position is quite an easy one there is perhaps not so much to be said against playing this stroke, though even in this case by electing to remain at the top of the table the player runs the risk of losing position in another stroke or two. When, however, the position which presents the two methods of play is of such a nature that only by a very good stroke can correct position for further top-of-the-table play be obtained the case is very different, and the amateur who constantly plays these difficult strokes instead of the alternative easy ones does not make big breaks nearly so often as he would were he to keep to the simpler and safer game.

As long as billiards is played amateurs will, however, attempt the top-of-the-table game, though few, very few indeed ever attain any high standard there. Whole volumes might be written on the subject and still the amateur would go on attempting the professional style. His failures never dishearten him and he goes on hoping some day to attain what for him is the unattainable. It is because amateurs to-day are so eager to improve at the top-of-the-table game and also because a knowledge of top-of-the-table play is often of the greatest assistance to those players who are wise enough to depend upon the ordinary game for the bulk of their scoring that an analysis will be made in this chapter of all the principal strokes used in the top-of-the-table game.

There are two ideal positions in the top-of-the-table game, one with the object white above the spot, and the other with it below it. Diagram 873 illustrates the first of these. The red is on the spot, the object white is touching or nearly touching the cushion, and the cue ball is so placed that the

*Although all the balls may be at the spot end of the table, unless the position is of such a nature that a stroke may be played in such a manner as to keep the balls there for the next stroke the position is not a top-of-the-table one as regards top-of-the-table play.

position presents the easiest of cannons by means of a half-ball or practically half-ball stroke. The cannon must be so played that the cue ball gets quite full on to the object white, the red ball at the same time being driven to the vicinity of the pocket. It matters not whether the red travels in a direct line to the pocket as illustrated on Diagram 874, or whether it travels to the pocket *via* the top cushion as illustrated on Diagram 875, or whether it comes to rest close to the pocket after rebounding from the side cushion as illustrated on Diagram 876. So long as the red is placed close to the pocket and the cue ball cannons full on to the object white the stroke has been well played. The only thing to be careful about when

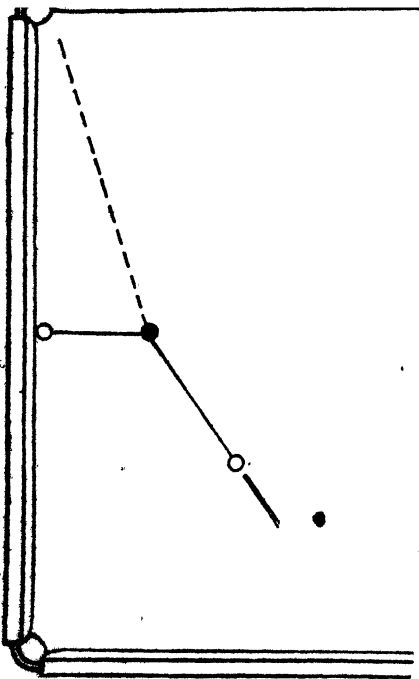


DIAGRAM 874.—The ideal top-of-the-table position. Cannoning gently and fall on to the white and sending the red to the vicinity of the pocket. All three balls situated exactly as on Diagram 873.

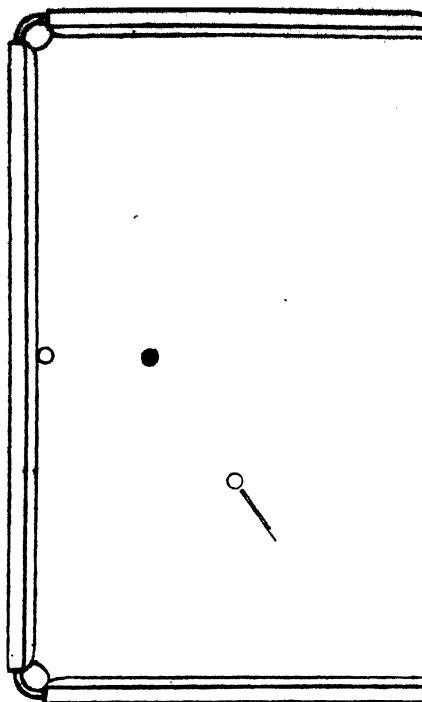


DIAGRAM 873.—The first ideal top-of-the-table position with the object white *above* the red ball. Red ball on the spot. Object white touching or nearly touching the cushion and right behind the red. Cue ball $21\frac{1}{2}$ inches from the side cushion and 22 inches from the top cushion.

sending the red to the pocket is that it does not *enter* it. Should a five shot be made the after-position will be almost hopeless, for with the red on the spot, the object white on the cushion, and the cue ball between the two and nearly touching the white any further score is most unlikely. With slight variations in the position of the cue ball on Diagrams 874, 875, and 876, that is as regards the angle which this ball makes with the object balls, it will sometimes be easier to send the red to the vicinity of the pocket *via* the top cushion and at other times to send it there *via* the side cushion.

Diagram 877 illustrates a variation of the ideal top-of-the-table position

illustrated on Diagram 873. Here, although the cannon is quite a simple stroke, a half-ball stroke will no longer serve, and in order to get *full* on to the object white and at the same time give the red ball a good line of direction the cannon must be played as a run-through. This run-through stroke cannot place the red quite close to the pocket as is the case with the approximately half-ball strokes illustrated on Diagrams 874, 875, and 876, nevertheless when the stroke is played with correct strength good position may be left for the pot which should follow the cannon. The intersected line on Diagram 877 indicates

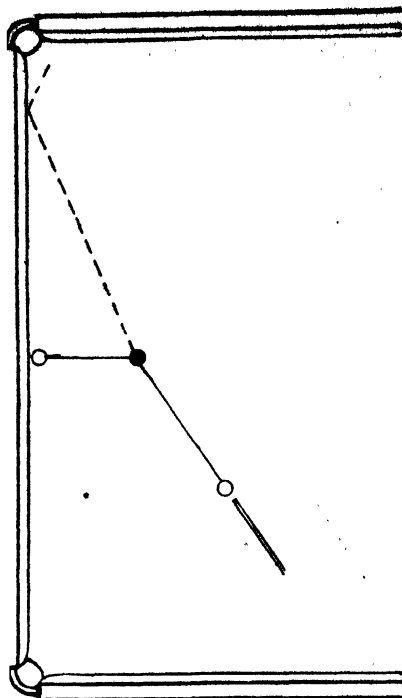


DIAGRAM 875.—The ideal top-of-the-table position. Cannoning gently and full on to the white and sending the red to the vicinity of the pocket. As the result of a slightly fuller contact than in the stroke illustrated on Diagram 874 the object ball strikes the top cushion a short distance from the pocket instead of travelling in a direct line to the pocket.

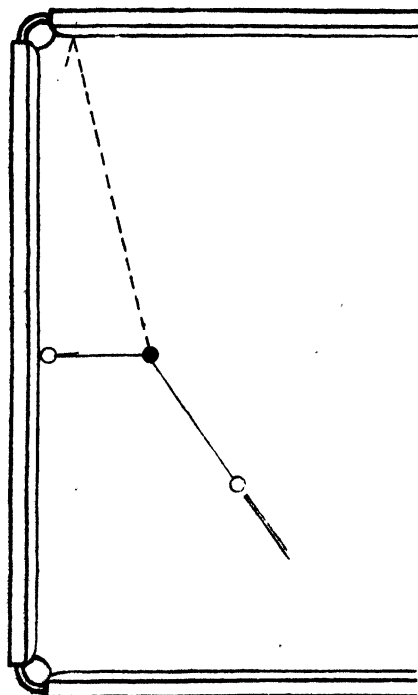


DIAGRAM 876.—The ideal top-of-the-table position. Cannoning gently and full on to the white and sending the red to the vicinity of the pocket. As the result of a slightly thinner contact than in the stroke illustrated on Diagram 874 the object ball strikes the side cushion at a point just a few inches from the pocket.

the direction in which the red should travel to the cushion and also about the distance it should rebound from it in order that it may be favourably situated for a retention of top-of-the-table position. In most top-of-the-table strokes there is very little latitude for error in strength without loss of position, and this is one of the chief reasons that top-of-the-table play is so much more difficult than the ordinary in-off game.

Diagram 878 illustrates the position that may easily result placing of the balls shown on 877. The cannon has been played, rectly both as regards the given to the red and the con

with the object white, but with a little too much pace. The red ball has travelled to the top cushion exactly as illustrated on Diagram 877, but has rebounded too far and has come to rest touching the side cushion. Had it travelled a little too far to leave the desired pot, but not as far as the cushion, position for an easy in-off might have been left, but when playing the top-of-the-table game a stroke that leaves an in-off instead of a pot is not by any means a perfect stroke.

In top-of-the-table play a cover often occurs, and very frequently indeed a cover means the end of the break. Often the stroke which causes the cover is of such a nature that only a very good player can with any certainty prevent its occurrence. At other times its

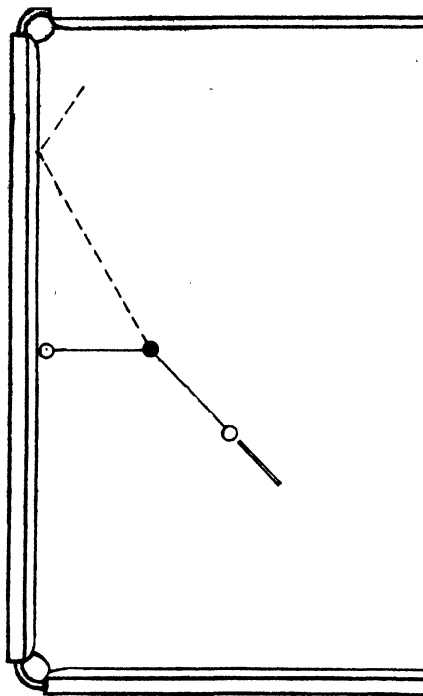


DIAGRAM 877.—A variation of the ideal top-of-the-table position. A slow run-through stroke cannoning gently and full on to the white and sending the red to the vicinity of the pocket. Red ball on the spot. Object white touching the cushion and right behind the red. Cue ball $20\frac{1}{2}$ inches from the top cushion and $25\frac{1}{2}$ inches from the side cushion.

DIAGRAM 878.—An example of the bad position which may be set up when the cannon illustrated on Diagram 877 is played quite correctly as regards contact with both balls, but with a little too much pace.

nature may be such that although no good player is at all likely to get into trouble over it in this particular way, a less experienced player gets a cover as the result of an imperfect stroke. The location of the balls on Diagram 877 illustrates one of the latter positions. As already stated, retention of position demands that the cue ball cannons full on to the object white, and in order that correct contact may be made with this ball the cannon must be played as a run-through. If, taken full enough the cue ball will the object ball somewhat to the left, and when this happens a cover is very likely to

Diagram 879 illustrates the kind of cover that generally occurs when, as the result of a stroke that has been played correctly enough as regards strength, the cue ball takes the object white on the left.

With a location of the balls at all like those shown on Diagrams 874, 875, 876, and 877 bad position may also result when the cue ball takes the object white quite gently and thinly on the inside, for although when this happens the resultant position cannot possibly be a cover, the cue ball may come to rest so close to the object white that a proper bridge cannot be made for the pot which should follow the cannon.

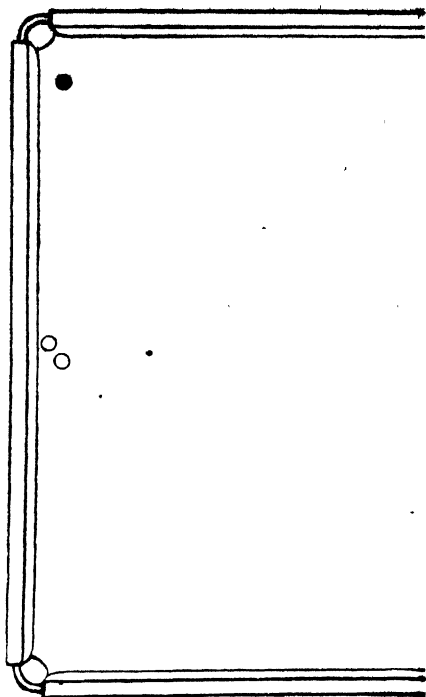


DIAGRAM 879.—An example of the very bad position which may be set up when the cannon illustrated on Diagram 877 is played correctly as regards strength but badly as regards contact with the red. By reason of the red not having been taken full enough the cue ball has taken the object white on the outside instead of getting full on to it, and the result of the stroke is a bad cover.

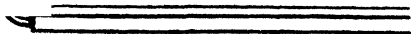


DIAGRAM 880.—An example of the bad position that may be set up when, in certain top-of-the-table cannons with the red on the spot and the object white more or less behind it and quite close to the cushion, the cue ball takes the object white quite gently on the inside. The stroke that follows is bound to be an awkward one, owing to the object white preventing proper cueing.

The kind of bad position which may be set up by reason of the object white being taken thinly on the right instead of full is illustrated on Diagram 880. Here the player has to play over the white, and this makes the pot a nasty one, even if played as a stroke without bothering about the after-position. Playing for position makes the stroke a still more difficult one, and failure at it almost invariably leaves good position for one's opponent.

In the ideal top-of-the-table position illustrated on Diagram 874, and in slight variations of this, the cannon when well played places the red in position for an easy pot, the cue ball being quite close

to the object white as the result of its having taken this ball full in the face. The stroke that follows the cannon is, of course, a pot to leave position for another cannon, and the nature of the pot determines the manner in which it must be played in order to leave position for a *top-of-the-table* cannon. Let us suppose, for example, that as the result of the cannon the red has come to rest quite close to the pocket, as shown on Diagram 881. Situated thus it can be potted by any kind of contact varying from a much fuller to a much thinner than half-ball one, but two strokes played with the same strength will give very different results as regards the distance the cue ball will travel if in one case the red is potted by a fullish stroke and in the other by a thinnish one, for naturally the fullish contact checks the pace of the cue ball a good deal more than the thinnish one does. In order therefore to cause the cue ball to travel the correct distance for the next stroke, the strength at which the pot is played must be regulated by the kind of contact with which the player determines to pot the ball. Although correct position can be obtained by either kind of pot the fullish contact is the better stroke to play, as it is less difficult to gauge correct strength when taking the red fuller than half-ball than it is when potting the ball by a thinnish stroke. Some running

side should be used in order to give the cue ball a good line of travel as it rebounds from the side cushion. When the stroke is perfectly played ideal *top-of-the-table* position is set up again. Perfection at this stroke is, however, difficult of attainment owing to the very small amount of latitude which exists for error in strength without loss of position. It is true that retention of good *top-of-the-table* position does not demand that the cue ball after potting the red should come to rest on one particular spot, nevertheless it must come to rest very near to the line which will allow of a half-ball stroke for the ensuing cannon, otherwise correct position will not have been obtained by the stroke. The line for a half-ball stroke with the red on the spot and the object white on the cushion right behind the spot is shown on Diagram 881, and it will be seen in the stroke illustrated on this diagram that the cue ball after its rebound from the cushion has come to rest quite close to this line. When a player plays the pot so well that he gets on or quite close to this line he sends the red to the pocket with the next stroke and then by the pot which follows the cannon he plays to get on the line again at the other side of the table. Were it not




DIAGRAM 881.—Potting the red and getting position for the ideal *top-of-the-table* cannon. The run of the cue ball has to be very nicely gauged. The line for the half-ball cannon is shown on the diagram, and unless the cue ball comes to rest very near to this line the resultant position will be more or less removed from the ideal one and may easily be very bad.

for the great difficulty of getting on to this half-ball line the leading professionals would have become so good at this particular play that great breaks would have been compiled by means of nothing but these two strokes, but even Stevenson, Reece, and Diggle, who to-day (1912) are our leading players at the top-of-the-table game, very rarely indeed score as many as 50 points by means of this alternate pot and cannon which when played to perfection keeps the object white on the top cushion right behind the spot.

The ordinary amateur as a rule causes the cue ball to travel with too much or too little pace when playing the stroke illustrated on Diagram 881. When the cue ball travels too far it

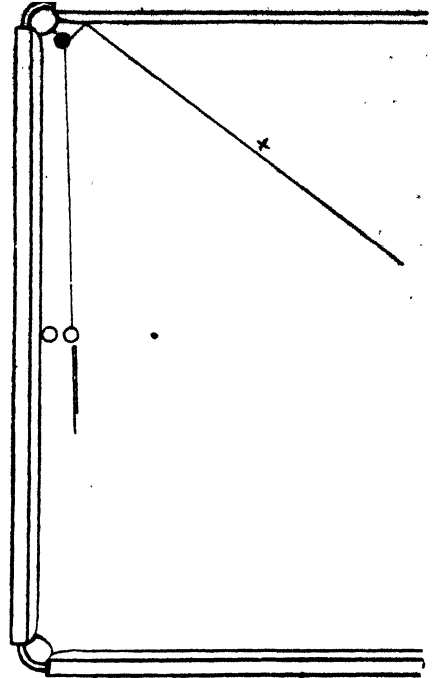


DIAGRAM 882.—An example of the bad position which may be set up when in attempting the perfect stroke illustrated on Diagram 881 the cue ball travels a good deal too far. The x on the diagram indicates the spot where it should have come to rest.

may travel as illustrated on Diagram 882, and when it does not travel far enough it may come to rest as indicated on Diagram 883. In either case the after-position shown on the diagram is a very bad one. When the cue ball travels as far as shown on Diagram 882, in addition to no ordinary stroke being on to continue with, the use of the rest is necessary, and when the cue ball only travels as far as indicated on Diagram 883 the player has to choose between an awkward pot or a screw cannon, which breaks up top-of-the-table position and which too often leads to a bad after-position. On Diagrams 881 and 883 the correct resting place of cue ball is indicated by a cross. This is, of course, provided that the cue ball

every bad position which may be set up when in attempting the stroke shown on Diagram 881 the cue ball does not travel far enough. The x on the diagram indicates the spot to which it should have travelled.

rebounds from the cushion on the line shown on these diagrams.

Often, as the result of a cannon off the red on the spot on to the object white behind the spot, the red is so placed for the next stroke that the player has the choice of playing the pot to leave a top-of-the-table cannon or to leave an ordinary cross in-off into the opposite top pocket, and whenever these alternative strokes are on, unless the player is really capable at the top-of-the-table game, he will be wise to play to leave his ball well situated for the cross in-off, for the ordinary cross in-off unless very poorly played always leaves the red well placed for a centre-pocket in-off. When, as more often than not is the case, however, a cross in-off position cannot be gained as the result of the pot which must follow the cannon, the only stroke to play is a pot to leave position for another cannon.

Diagram 884 is illustrative of this latter position. Here, the pot must be played to leave a cannon. No side is required, but unless the strength of the stroke is very nicely gauged the after-position will be indifferent or bad. The continuous line on the diagram indicates the distance which the cue ball should travel. It is not, of course, essential that it should travel *exactly* as illustrated on the diagram, but should it stop several

inches short of, or should it travel several inches past the end of the line shown on the diagram, retention of top-of-the-table position—when at all possible—will necessitate the playing of a very good stroke.

Diagram 885 illustrates another pot which often has to be played after a cannon at the top of the table in order to retain top-of-the-table position. A thinnish contact is necessary for this pot, and in order that correct position may be obtained for the subsequent cannon the stroke must be played with little more strength than is necessary to cause the ball to reach the pocket. Moreover, plenty of check side must be used in order to *check* the speed of the cue ball as it rebounds from the cushion. The thin contact with the red takes so little pace out of the cue ball that unless the stroke is played with plenty of check side the cue ball will rebound too far from the cushion to leave a good angle for the cannon which should follow the pot. On Diagram 885 the continuous line indicates roughly the distance which the cue ball should travel after its rebound from the cushion. The check side, of course, not only checks the speed of the ball, but also causes it to come off the cushion much more squarely than it would do were a plain-ball stroke used for the pot. The fact that in

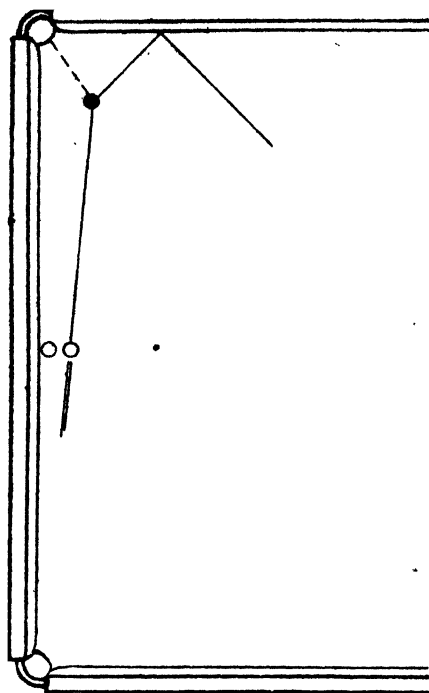


DIAGRAM 884.—A top-of-the-table stroke. A pot to leave position for the cannon. Red ball $4\frac{1}{2}$ inches from the top cushion and $9\frac{1}{2}$ inches from the side cushion. Object white right behind the spot and touching the cushion, cue ball half an inch from the object white and between it and the spot.

order that correct position may be left for the next stroke this thin pot must be played with check side and with a nicety of strength makes it too difficult a stroke for the average player or even for the fairly good amateur, and consequently by far the safer stroke to play is the in-off. With the balls to the measurements given under Diagram 885 the in-off is a somewhat thin one, but is not by any means a difficult stroke. Diagram 886 illustrates the very good position that may be gained by means of this in-off.

Although the position illustrated on Diagram 873 with the red on the spot, the object white on the top cushion right behind the red, and the cue ball correctly placed for the cannon is considered the ideal top-of-the-table position, it is not the one from which the amateur can score the most points by top-of-the-table

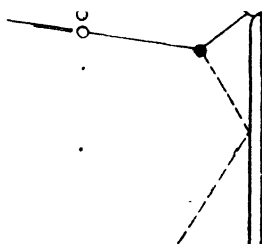


DIAGRAM 886.—An alternative stroke to the one illustrated on Diagram 885. A thin in-off to leave position for a drop cannon.

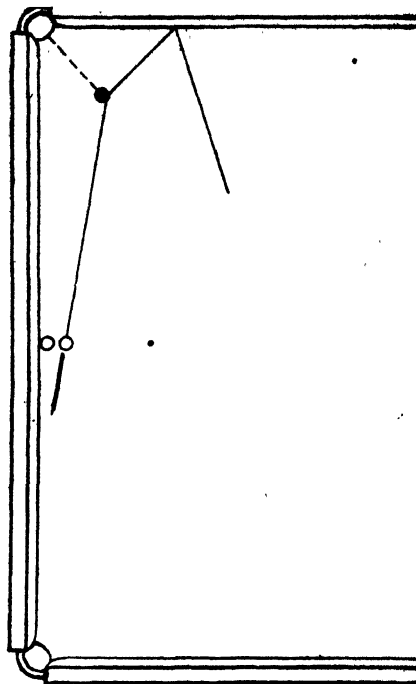


DIAGRAM 885.—A top-of-the-table stroke. A pot to leave position for the cannon. Red ball 6 inches from the top cushion and 9 inches from the side cushion. Object white right behind the spot and touching the cushion. Cue ball behind the spot and half an inch from the white. The stroke should be played with plenty of check side.

play. The reason that the position is considered an ideal one is because by means of very accurate play a succession of cannons and pots can be made without moving the object white from its original position. Theoretically, a player might go on making alternate cannons and pots for an indefinite length of time without loss of position, but as already explained, owing to the difficulty of getting absolutely correct position for the cannon after potting the red the ideal position is seldom retained for long even by the most expert exponents of top-of-the-table play, and is generally lost by the good after very few strokes.

A variation of the ideal

shown on Diagram 873 is illustrated on Diagram 887. and the good amateur has a much better chance of making a decent break by top-of-the-table play from this position than he has from the position with the object white on the top cushion. On Diagram 887 the red is on the spot and the object white is $1\frac{1}{2}$ inches from the red and right behind it, and the cue ball is about $3\frac{1}{2}$ inches from the red and exactly in a line with this ball and the centre of the right top pocket. The position, therefore, presents a choice of two strokes, viz., a cannon which sends the red to the pocket or a screw-back pot which, when correctly played, gives the player almost the identical position he had previous to his playing the pot. It is clear that the pot is the stroke to play, as it gives the player three extra points, and it may be taken as an axiom in top-of-the-table play that when a position offers a choice between a cannon by means of which good position may be retained and an easy pot which yields practically the previous cannon position, the pot is the game. In fact, it will often happen that the red ball may be put down *twice* previous to the cannon being played, and when this is the case the player may gain an extra six points by not straightaway playing the cannon. For example, if in the position illustrated on Diagram 887 the red instead of being on the spot were, let us say, an inch from the spot but still in a direct line with the cue ball and the centre of the corner pocket, two screw-back pots could be played, for only the second one would be a pot off the spot.* Although this screw-back pot is an easy enough stroke it must be played with care, for it will often happen that without the pot being missed the cue ball instead of travelling back in a dead straight line will come to rest a little above or below the line of a straight recoil. When this happens it is because the red has not travelled *straight to the centre* of the pocket. Also, as the result of the screw the cue ball must not come to rest too close to the billiard spot, nor must it recoil too far after its contact with the red. Let us suppose that the pot has been so correctly played that the cue ball takes up its original position shown on Diagram 887. The next stroke is the cannon. This must be played quite gently in order to move the object white as little as possible, and care must be taken to get quite thinly on to the white, for when



DIAGRAM 887.—A top-of-the-table position. A variation of the ideal position illustrated on Diagram 874. The cue ball must cannon very gently on to the white in order to move this ball as little as possible. Red ball on the spot. Object white $1\frac{1}{2}$ inches from the red and on the central line of the table. Cue ball $3\frac{1}{2}$ inches from the red and in an exact line with this ball and the centre of the corner pocket.

*When the red is potted twice in succession off the spot without any other score being made it goes on the

the stroke is played quite correctly as regards strength, but badly as regards contact with the white the player may easily be confronted with a position like the one illustrated on Diagram 888, which position presents nothing but a cannon by an exceedingly difficult massé stroke.

Diagram 889 indicates the kind of position that should be left when with the balls in the position illustrated on Diagram 887 the cannon has been well played. By reason of the gentle contact which has been made with the object white this ball has

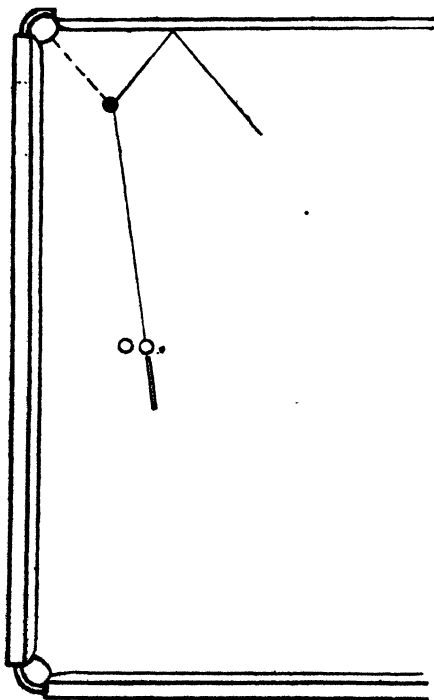


DIAGRAM 889.—An example of the kind of stroke which follows a correctly-played cannon in the position shown on Diagram 887. Owing to the object white being near the spot the run of the cue ball has not to be nearly so exact as is the case with the white on the top cushion. The extra distance which the cue ball may travel without loss of position is shown on Diagram 890.

DIAGRAM 888.—An example of the bad cover which may occur when in playing the stroke illustrated on Diagram 887 the cue ball gets too full on to the object white.

only been moved about an inch or two, and by reason also of its having been taken quite thinly it has been moved towards the top cushion, and the cover which may occur when the cue ball gets too full on to it (and which is illustrated on Diagram 888) has been avoided. With the balls in the position shown on Diagram 889 the obvious stroke to play is the pot to leave position for a cannon. The continuous line on the diagram

travels when the pot is played good strength. Owing, however, to the object white being so near the there is a fair amount of latitude how far the cue ball may run loss of position, and it is this latitude as regards variation in the run of the

ball which makes top-of-the-table play with the object white close to the spot so much less difficult than it is with the object white close to the top cushion, though still right behind the spot. For example, let us suppose that instead of the cue ball only travelling as far as indicated by the continuous line on Diagram 889 it travels as far as indicated by the line on Diagram 890. In this case top-of-the-table position may still be retained by means of a run-through cannon. This run-through cannon to leave further position is illustrated on Diagram 891. As the result of a good stroke the cue ball cannons gently, on to the white, and by getting nearly full on to it moves it just a little nearer to the top cushion, and the red rebounding a short distance from the

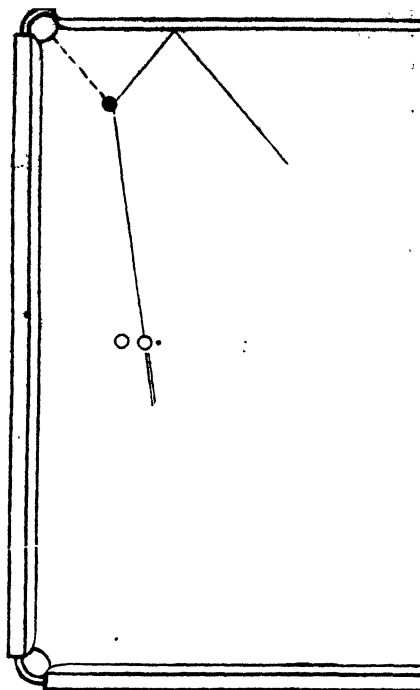


DIAGRAM 890.—A variation of the stroke illustrated on Diagram 889. The cue ball has travelled considerably farther without loss of position.

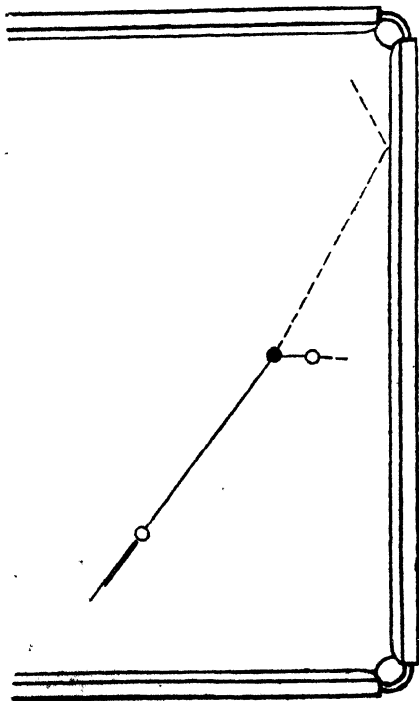


DIAGRAM 891.—The gentle, very fullish, run-through cannon which follows the pot when the cue ball travels as far as indicated on Diagram 890.

cushion, as indicated by the intersected line on the diagram, comes into position for another pot, which in turn if correctly played gives position for another cannon. Going back, however, to the stroke illustrated on Diagram 889, we have the position illustrated on Diagram 892 to continue with. Here, the cannon is played quite gently again in order to move the object white as little as possible, but as straight up the table as possible, and the cannon is followed by a pot which again leaves position for another cannon. By means of these alternate correctly-played pots and cannons the object ball at last takes up a position close to the top cushion, right behind the spot—or only very slightly to the right or the left of the centre of the top cushion—and thus

finally the ideal position illustrated on Diagram 873—or something very like it—is set up, but in the meantime quite a large number of points may have been scored by the strokes which have led up to this final position.

Top-of-the-table positions constantly occur which although affording the player the choice between an easy cannon and a pot which is never as easy as the cannon, and which may be a difficult stroke, are of such a nature that retention of position necessitates the playing of the pot. These positions generally result from some top-of-the-table pot which has not been played quite correctly—unless of course the player has played to leave another pot—

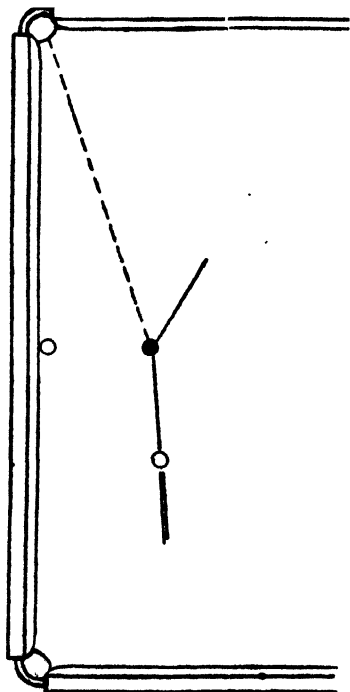


DIAGRAM 893.—A top-of-the-table stroke. A run-through pot to leave position for a cannon. Red ball on the spot. Object white touching the cushion and right behind the spot. Cue ball 12 inches from the top cushion and 20½ inches from the side cushion.

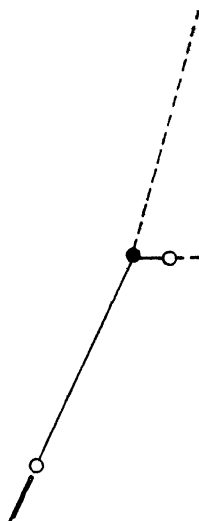


DIAGRAM 892.—The gentle cannon which follows the pot when the cue ball travels as indicated on Diagram 889.

but of course they may be set up by other strokes.

Diagram 893 illustrates one of these positions. Here, the screw cannon is quite an easy stroke, but it breaks up top-of-the-table position and seldom leaves any likely scoring stroke to continue with. The pot, on the other hand, although not quite as easy as the cannon, when correctly played leaves the cue ball in good position for a cannon by means of which the red may be placed in position for another pot. This pot, illustrated on Diagram 893, is not by any means a difficult stroke even for the average player, but in order that the cue ball may travel as indicated the continuous line on stroke—which is a ru be played without much strength.

Diagram 894 illustrates a variation of

THE STROKES OF THE GAME.

the position shown on Diagram 893. The pot is exactly the same kind of stroke in both positions, but the cue ball's greater distance from the red on Diagram 894 makes the pot on this diagram a much more difficult stroke than the one illustrated on Diagram 893. The cannon, however, means loss of position, as it must send the red *down* the table. Consequently, the player who is above the average plays the pot in order that he may by a successful stroke retain top-of-the-table position. He may look longingly at the cannon, knowing well that should he fail at putting the red down he will leave good position for his opponent. The player who goes in for the top-of-the-table game has, however, constantly to play difficult strokes to retain position, and thoughts of what he will leave his opponent in the event of his missing a difficult pot more likely than not will cause him to miss the stroke. Half-hearted strokes in top-of-the-table play nearly always spell failure, and no player who has not plenty of nerve will ever make much progress in this branch of the game. Positions like the one illustrated on Diagram 894 afford a nice object lesson in the difficulties of the top-of-the-table game as contrasted with the simpler and easier in-off game. More often than not the position illustrated on Diagram 894 results from a pot into the left top pocket, which by reason of its not having been played quite correctly has resulted in the cue

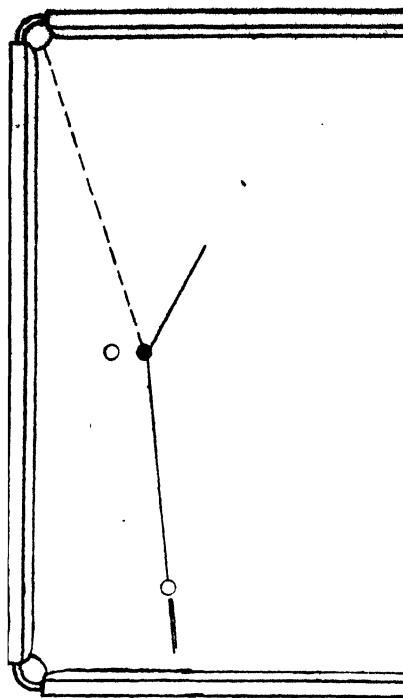
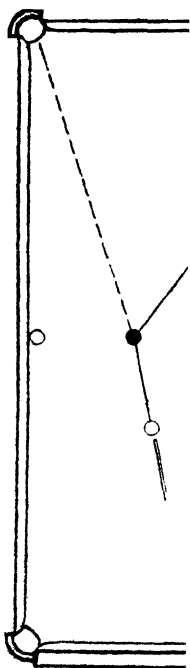


DIAGRAM 894.—A top-of-the-table stroke. A run-through pot to leave position for a cannon. A difficult stroke owing to the distance of the cue ball from the red. The alternative stroke, a simple cannon, puts an end to top-of-the-table play and generally results in bad after position. Red ball on the spot. Object white 6 inches from the top cushion and on the central line of the table. Cue ball 9 inches from the side cushion and 14½ inches from the top cushion.

ball remaining too high up the table to leave position for a cannon which once more sends the red to the vicinity of the pocket. Probably, instead of playing the stroke which has resulted in the position illustrated on Diagram 894, position could have been obtained for a cross in-off, or the red may have offered the choice of a pot or an in-off, but the player has elected to play the top-of-the-table game, and by doing so has at once been compelled to face an awkward position. The good position which results from this difficult pot is illustrated on Diagram 894. Even should the cue ball not travel exactly as indicated by the continuous line on the diagram the pot is bound to leave perfect position owing to the object white being so near the red when this ball is placed on the spot again.

Diagram 895 illustrates another position which does not allow of the red being sent to the pocket as the result of the cannon. Here, the first-class top-of-the-table player has a choice of three strokes, by any of which top-of-the-table

position may be retained, viz., a screw cannon by which the balls may be bunched together for nursery cannon play—a difficult stroke which has already been discussed in the chapter on NURSERY CANNONS—a screw cannon by means of which the red ball may be placed near the left corner pocket—an extremely difficult stroke owing to the kiss which has to be avoided, and which will be described later on in this chapter—and a pot which must be played with plenty of pace in order that the cue ball after taking the top and side cushions may come to rest in good position for the cannon which should follow this stroke. This pot can be played as a plain-ball stroke, but it is better to play it with running side, because in the first



A run-through pot to leave position for a cannon. Red ball on the spot. Object white touching the cushion and right behind the spot. Cue ball 14 inches from the top cushion and 23½ inches from the side cushion.

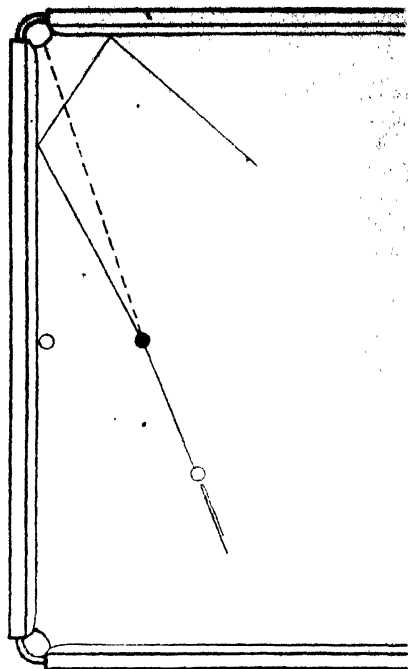


DIAGRAM 895.—A top-of-the-table stroke. A run-through pot played with sufficient pace to give correct position for the cannon. Red ball on the spot. Object white touching the cushion and right behind the spot. Cue ball 18 inches from the top cushion and 18½ inches from the side cushion.

place the side on the cue ball causes this ball to rebound from the side cushion at a better angle than it does when the stroke is played without side, and secondly the use of side causes the cue ball to rebound from the two cushions with more speed than is the case with a plain-ball stroke, and consequently not so fast a stroke is required in order to get correct position for the cannon when side is used as is necessary in the case of a stroke played without side. The use of side, however, the pot more difficult for the average player than the plain-ball stroke.

good position which may be obtained by means of this pot—which is a feature of an old spot stroke—is illustrated

Diagram 895, the run of

being indicated by the continuous line.

Diagram 896 illustrates a stroke that is constantly played by professional players. The cue ball, although nearly in a line with the red ball and the pocket, is just a little too high up the table for a straight screw-back stroke. In order that it may be put down, the red must be taken just a shade less than full, but this very slight difference between a dead full and a nearly full contact results in a big difference in the line of the cue ball's recoil when screw is used. A full contact, of course, causes the ball to come back quite straight, but in the position shown on Diagram 896 if the pot is played by means of a screw-back stroke the cue ball will take up a position more or less as indicated on Diagram 897, and thus loss of position—at any rate as regards top-of-the-table play—results from this screw. Irrespective of its breaking up top-of-the-table position this pot by means of a screw stroke is anything but an easy one. When the cue ball is in a line with the red and the pocket and not far from the red a pot by means of a screw presents no difficulty to any fair player, but when the cue ball is just a little out of a straight line with the red and the pocket the screw-back becomes a very different stroke, and a few trials at the table will quickly convince any player that this is so.

The stroke illustrated on Diagram 896 by means of which top-of-the-table position is retained is also a difficult stroke, for the pot has to be made by means of what is known as a stun stroke. This stroke may be described as something between a run-through and a screw. An ordinary run-through stroke will not serve here, for such a stroke would leave the cue ball too high up the table to give the correct angle for the cannon which should follow the pot, and as we have already seen, the proper angle cannot be gained by means of the screw-back stroke. The stun stroke, by means of which correct position for the cannon is gained, is played by striking the cue ball *at the centre* and using a moderate amount of pace. The stroke is not an easy one, for more pace must be used than when playing an ordinary run-through pot off the spot and yet the strength of the stroke has to be very nicely gauged in order that the cue ball may take up a correct position for the next stroke. Too much pace, especially if it is struck a trifle below the centre, will cause the cue ball to get too low down the table and too little strength will cause it to take up a position too high up the table. Diagram 898 gives an idea of the various lines of travel which the cue ball may take as the result of this pot

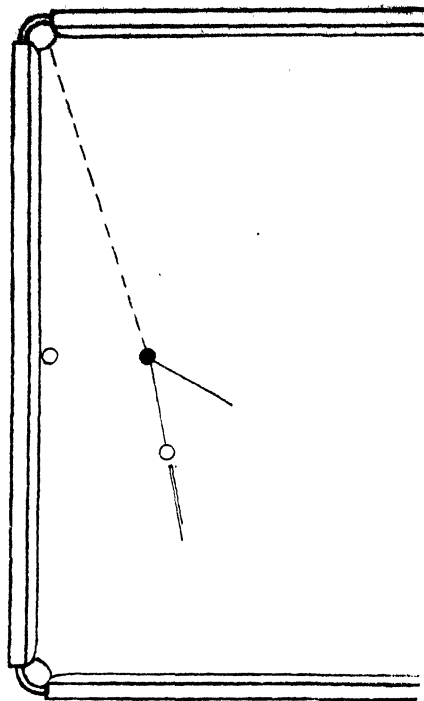


DIAGRAM 897.—The kind of position which is set up when with the balls to the measurements given under Diagram 896 a screw-back stroke is used for the pot instead of a stun stroke.

with the red on the spot and the cue ball situated as shown on Diagram 896. The line nearest the top cushion indicates the path of the cue ball which results from a run-through stroke, the next one the result of a stroke which is just the beginning of a stun stroke, the third line indicates the correct path which the cue ball takes as the result of a perfect stroke, the fourth the line on which the cue ball travels when just a little too much of the stun has entered into the stroke though not enough to cause loss of position, and the two remaining lines show the bad position which the cue ball may take up as the result of a stroke played with too much strength, or as the result of the cue ball having been hit a little below the centre, or as the result of the combination of these two factors. Nor does it require any great pace to cause the cue ball to take up a bad position as the result of a stun stroke. Just a little more pace than must be used to obtain correct position will give a more or less bad one, and it is the nicety of strength which must be used for the stroke which makes it a difficult one. If any fair player sets up the position illustrated on Diagram 896 he will be able to play the stroke quite correctly after a few trials, because when he finds that

too much pace or too little pace has been used in the first two or three attempts he regulates the pace accordingly in the next attempts, but when this position or some modification of it occurs in a game he is without any guidance as to the pace which is necessary for a correct stroke.

Diagram 899 illustrates another pot which is constantly made use of in top-of-the-table play. With the balls situated to the measurements given under the diagram the cannon is a screw, and although top-of-the-table position can be retained by means of this screw, its retention demands an exceedingly well-played stroke. The pot is a much simpler stroke, for by its means good position may be obtained for a cannon. The continuous line on the diagram indicates the distance which the cue ball should travel in order that it may take up correct position for the cannon. In order that the cue ball may rebound a sufficient distance from the top cushion the stroke must be played with a fair amount of pace, for the nearly full contact which must be made with the red takes a lot of pace out of the cue ball. With the cue ball situated as shown on the diagram no side is necessary, but in some variations of this position the stroke must be played with running side in order that the cue ball may rebound from the cushion at a more acute angle—and in this way take up position—than it would without side. In the position illustrated on the

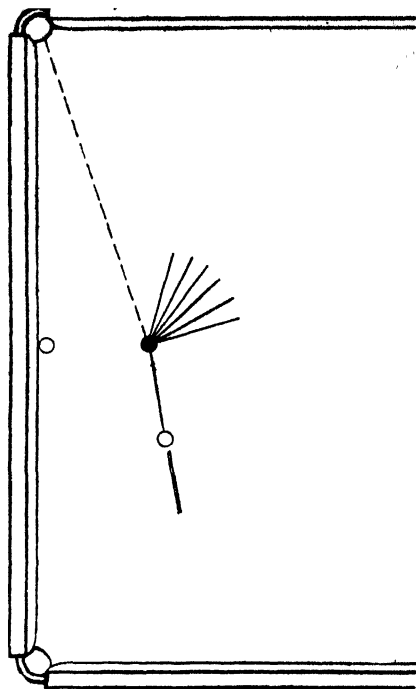


DIAGRAM 898.—The different lines of the cue ball's travel according to whether the pot is made by a run-through stroke or by varying kinds of stun strokes. Position of the balls as on Diagram 896.

players often play the stroke with a good deal of pace and slightly stun the cue ball. The stunning of the cue ball checks its speed and prevents its rebounding too far from the cushion notwithstanding the pace at which the stroke has been played. Very often when this stroke is played in positions which are typified by the one illustrated on Diagram 899 the cue ball strikes the top cushion pretty close to the object white—at the moment of contact with the cushion it may possibly be within a ball's diameter of the white—and when this occurs spectators sometimes give a little gasp, thinking for a moment that the player has played a cannon and missed it.

Diagram 900 illustrates a pot which

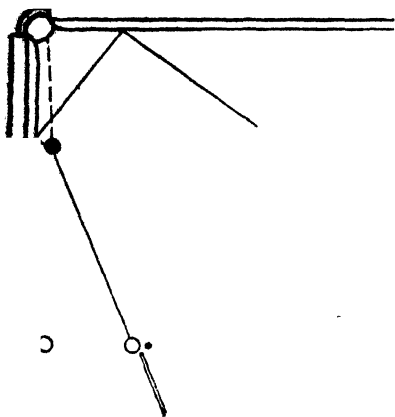


DIAGRAM 900.—A top-of-the-table stroke. A pot to leave position for a cannon. Red ball half an inch from the top cushion and about 14 inches from the side cushion. Object white touching the centre of the top cushion. Cue ball 10 inches from the top cushion and on the central line of the table.

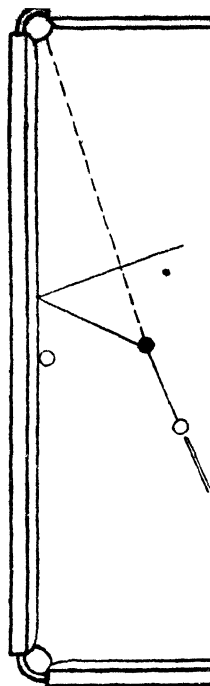


DIAGRAM 899.—A top-of-the-table stroke. A pot to leave position for a cannon. Red ball on the spot. Object white touching the top cushion, 33 inches from the left side cushion and 35 inches from the right side cushion.

is often played by top-of-the-table players in order to retain top-of-the-table position. Not only is the stroke a difficult one—especially if the pockets are tight—owing to the ball being so near the cushion, but the strength of the stroke has to be very nicely gauged in order that the cue ball may run into correct position for the cannon which should follow the pot. The stroke must be played with running side, for running side not only causes the cue ball to rebound from the cushions with more speed than would be the case with a plain-ball stroke, but it also gives it a correct line of travel. Amateur players constantly come to grief over this pot, and a much safer stroke even for players a good deal above the average, is the run-through

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which if at all well played places the red in good position for a top-pocket in-off.

Diagram 901 illustrates a variation of the stroke shown on Diagram 900. The red is now touching the cushion and the pot is consequently a much easier stroke. As before, in order that the cue ball may travel with good direction, the stroke must be played with running side. In addition to side giving the cue ball a good line of travel it also makes this cushion pot an easier stroke than it would be without the use of side. As with the pot illustrated on Diagram 900 the strength of the stroke has to be very nicely gauged in order that the cue ball may travel far

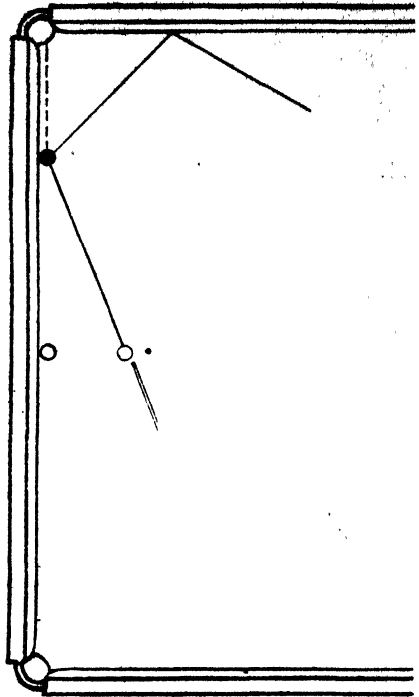


DIAGRAM 901.—A top-of-the-table stroke. A pot to leave position for a cannon. Red ball touching the cushion and about 14 inches from the side cushion. Object white touching the centre of the top cushion. Cue ball 9 inches from the top cushion and on the central line of the table.

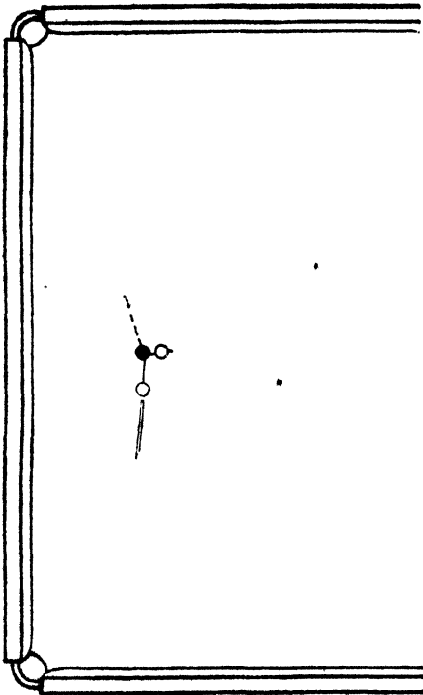


DIAGRAM 902.—The second ideal top-of-the-table position. Object white *below* the red. Red ball on the spot. Object white about one inch from the red and on the central line of the table. Cue ball the same distance from the top cushion as the red and 29 inches from the side cushion.

enough, and yet not too far to leave correct position for the cannon. An alternative stroke is the run-through in-off, which enables the player to revert to the in-off game.

In all the strokes which have so far been discussed in this chapter the object white has been above the spot. When this ball is right behind the spot or nearly behind it and the cue ball is so placed that the cannon which drives the red to the pocket allows of its getting full or nearly full on to the object white, position is called an ideal top-of-table position, for as we have seen, it is possible by good play to score a number of points by means of cannons and pots. The

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position occurs when with the red on the spot the object white is close at hand but *below* it, and the cue ball is in a commanding position for a cannon which will send the red towards the pocket, and which if correctly played will move the object ball but little.

Diagram 902 illustrates this position. Here, the red must not be sent up to the pocket, because a stroke which places the red near the pocket will also move the object white a considerable distance from the spot. Instead, the cannon must be played quite gently in order that the object white may be moved as

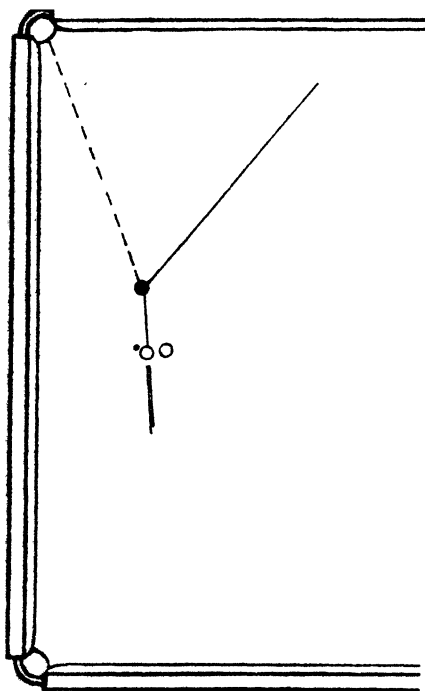


DIAGRAM 904.—The kind of position which may be set up when in the position illustrated on Diagram 902 the cue ball makes too full a contact with the red. The cue ball must travel down the table as the result of the pot and the cannon which follows the pot must be off the white instead of off the red. Red ball 12 inches from the top cushion and 26 inches from the side cushion. Position of the object white and the cue ball very much the same as on Diagram 903.

DIAGRAM 903.—The kind of position that is set up as the result of a well-played stroke from the position illustrated on Diagram 902. Red ball $9\frac{1}{2}$ inches from the top cushion and $27\frac{1}{2}$ inches from the side cushion. Object white $15\frac{1}{2}$ inches from the top cushion and $33\frac{1}{2}$ inches from the right side cushion. Cue ball $13\frac{1}{2}$ inches from the top cushion and 33 inches from the left side cushion. A slow run-through pot leaves correct position for a cannon off the red.

little as possible. At the most the white ball should not be moved more than a couple of inches, and when the stroke is perfectly played the cue ball will take it so gently that it will move it but an inch or even less than this. In addition to the cannon having to be played quite gently, the red should be made to travel as nearly as possible in a direct line to the pocket, for only in this way can the particular kind of ideal position which is illustrated on Diagram 902 be retained.

Diagrams 903 and 904 will show this is so. Diagram 903 shows the kind of position which may be set up when

in the stroke shown on Diagram 902 the red is made to travel in a direct or very nearly direct line to the pocket, and Diagram 904 typifies the kind of position which will be set up when as the result of its having been taken too full it does not travel in a direct line to the pocket. In both these positions which have resulted from the placing of the balls on Diagram 902 the red has to be potted, but whereas in the position shown on Diagram 903 the pot if played as a slow run-through will leave the cue ball in position for a gentle cannon off the red, the pot on Diagram 904 cannot leave position for this cannon off the red, because the cue ball after its contact with the red must travel *down the table* instead of remaining *above the spot* as is the case with the pot on Diagram 903. The retention of the ideal position shown on Diagram 902 demands that as the result of the pot which follows the cannon the cue ball must come to rest above the spot, and the cue ball can only take up a position above the spot when the pot is of the nature of the one shown on Diagram 903. When the pot is of the nature of the one shown on Diagram 904, the next stroke if a cannon must be off the white, and though it may be quite possible to retain position by a well-played stroke, the ideal position illustrated on Diagram 902 is at once broken up.

Diagram 905 illustrates a kind of position which often results from the cannon in the ideal position shown on Diagram 902. Here, a gentle run-through pot will not serve, for although as the result of such a stroke the cue ball will travel towards the top cushion, the cannon that will be left for the next stroke will be a rather thin one, and very often such a cannon although quite easy just as a stroke causes loss of position.

Diagram 906 illustrates the thin-cannon position that may be left as the result of a slow run-through pot with the balls situated as shown on Diagram 905. In order to prevent this thin-cannon position being set up the cue ball must be made to rebound some little distance from the cushion. The correct way of playing the pot with the balls to the measurements given under Diagram 905 is by means of what may be termed a mild stun stroke. This is illustrated on Diagram 907. The stroke is played with a fair amount of strength—as contrasted with the slow stroke used for the run-through pot—and the cue ball

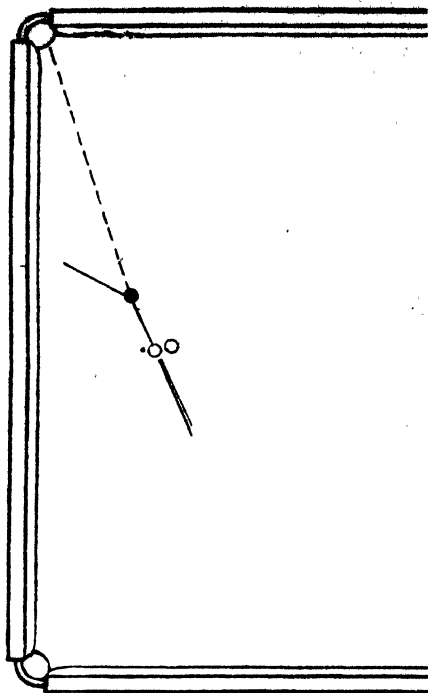


DIAGRAM 905.—A good position which is often set up as the result of the cannon from the ideal position illustrated on Diagram 902 and the wrong way of playing the pot. The slow run-through pot does not leave correct top-of-the-table position. Red ball $8\frac{1}{2}$ inches from the top cushion and 25 inches from the side cushion. Object white $15\frac{1}{2}$ inches from the top cushion and $33\frac{1}{2}$ inches from the left side cushion. Cue ball $13\frac{1}{2}$ inches from the top cushion and on the central line of the table. The correct way of playing the pot is illustrated on Diagram 907.

is hit at the centre or just fractionally below the centre. The effect of such a stroke is to cause the cue ball to take the cushion much more squarely than it could do as the result of a following-on shot. A comparison of Diagrams 905 and 907 will show how, with exactly the same contact with the red, the cue ball's line of travel varies with the different kind of stroke used for potting the ball. The angle at which the cue ball strikes the cushion in the stroke illustrated on Diagram 907 gives it a good line of rebound, and provided that the strength of the stroke has been correctly judged, position may be left for a cannon which is of exactly the same nature as the ideal position illustrated on Diagram 902.

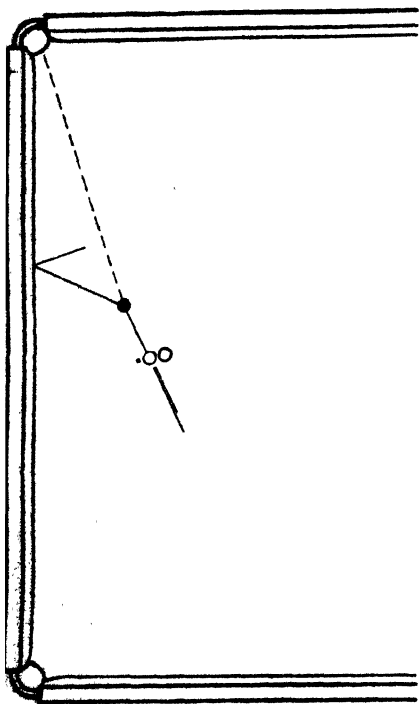


Diagram 907.—A top-of-the-table stroke. The pot played with sufficient strength to cause the cue ball to rebound some little distance from the cushion. Situation of cue ball as on Diagram 902.

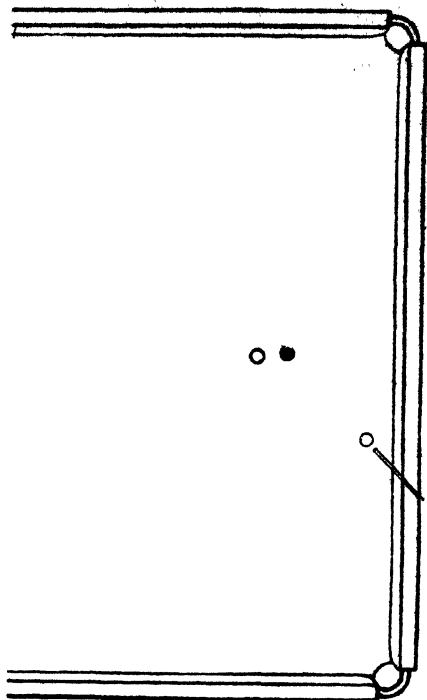


Diagram 906.—The thin-cannon position which is set up as the result of the slow run-through pot illustrated on Diagram 905.

Diagram 908 illustrates the good position which with slight variations may be set up as the result of two strokes—a cannon and a pot—from the ideal position shown on Diagram 902. The cannon has been played so gently that the object white has only been moved half an inch or so lower down the table, and the pot which has followed the cannon has left the cue ball above the red, and so well placed for the cannon that the position which is set up as the result of these two strokes is of the same nature—as regards the further position to be obtained from it—as the ideal position illustrated on Diagram 902. The cannon must therefore be played in the same way as in the ideal position, that is by means of a stroke which moves the object white as little as possible, and which at the same time so places the

red that it may be potted by means of a stroke which will leave the cue ball above the spot in position for a cannon which will again be of the nature of the position from which this top-of-the-table play has commenced.

By means of very good play this alternate cannon and pot may be continued for quite a number of strokes, and provided that as the result of each cannon the red is so placed that correct cannon position may be obtained by means of the pot, this particular kind of top-of-the-table play may be continued until the object white has at last travelled too far down the table to allow of its being any longer prac-

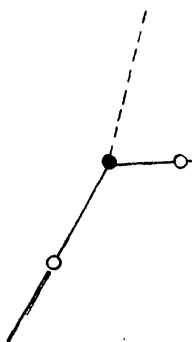
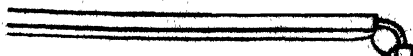


DIAGRAM 908.—The kind of position which is set up as the result of two perfectly played strokes from the ideal position illustrated on Diagram 902. Red ball on the spot. Object white about $1\frac{1}{2}$ inches from the red and on or close to the central line of the table. Cue ball correctly situated for a cannon which causes the red to travel on the line to the pocket and which at the same time moves the object white but little.

ticable. At first when the cannons are perfectly played the object white is moved but little, but, of course, each cannon is bound to send it a little farther down the table. Not only this, but the second cannon generally moves it more than the first one does, the third one more than the second, the fourth one more than the third, and so on. The reason of this is because although with the object white quite close to the red it is easy to cannon on to it so gently that it is hardly The farther it gets away from the the less easy does it become to full on to it as gently as a

DIAGRAM 909.—A top-of-the-table stroke, A cannon which places the red in position for a pot by means of which position may be gained for a subsequent cannon off the white. Red ball on the spot. Object white 21 inches from the top cushion and on the central line of the table. Cue ball 5 inches from the top cushion and 23 inches from the side cushion.

of very good play half a dozen cannons and the same or a larger number of pots—for, as presently to be described, two pots may often be played to one cannon—may set up a position very similar to the one illustrated on Diagram 909. Here, the object white is already a considerable distance from the red—its actual position on the table being 21 inches from the top cushion. Being now well removed from the red it is beginning to get out of hand, and the cannon, which is the only stroke to play, will send it another inch or two down the table, and with it so far from the red this particular method could not with any safety be continued. The top-of-the-table player with a position

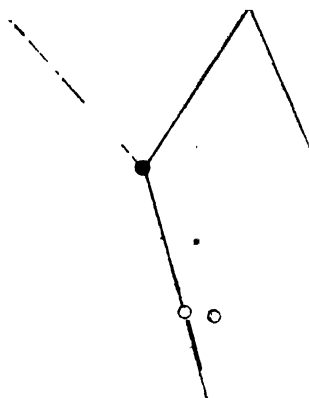


DIAGRAM 910.—Potting the red to leave position for a cannon off the white.



DIAGRAM 911.—A top of-the-table stroke. A gentle stab pot to leave position for another pot. Red ball 12 inches from the top cushion and 20 inches from the side cushion. Cue ball 13 inches from the top cushion and on the central line of the table. Object white about a quarter of an inch below the cue ball.

similar to that illustrated on Diagram 909 plays a cannon to leave a pot of such a nature that he will be enabled by means of this pot to get *below the object white* instead of as heretofore remaining above the red ball. In order that the red may be properly placed for the next stroke the cannon illustrated on Diagram 909 must be made by means of a fullish contact with the red. The intersected line on the diagram indicates a good line of travel for the red as the result of a correct stroke, and Diagram 910 illustrates how position for a cannon with the cue ball below the object white may be obtained by means of the pot which follows the cannon illustrated on Diagram

form consists of alternate cannons and pots, but very often after a cannon the red is potted twice before the next cannon is played. Sometimes this is

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because the first pot has not been played in a sufficiently accurate manner to leave the cannon position which the player attempted to obtain, and this has necessitated a pot off the spot in order to recover position. At other times the second pot is the result of the first one having been intentionally played in such a manner as to leave position for another one. When the object white is below the spot as in the position illustrated on Diagram 911 each succeeding cannon made in the course of the particular kind of top-of-the-table play already described is bound to send it farther and farther down the table, until after a few pots and cannons this method of play must terminate owing to the object white's distance from the spot. It follows clearly then that if an occasional two pots can be made to one cannon a larger number of points will be scored before the object white gets too far down the table for this particular kind of play than will be the case if each pot is followed by a cannon. In the position illustrated on Diagram 911 the cue ball and the red are nearly but not quite in a line with the pocket. As the red must be taken just slightly to the right, a stab stroke will cause the cue ball to travel down the table, and when the strength of the stroke is very nicely gauged the cue ball will be very nearly if not quite in a line with the opposite corner pocket and the red when this ball is placed on the spot. In this way the first pot may often be followed by a second one—a run-through or a screw-back—which will leave the cue ball correctly placed for the cannon.

Diagram 912 illustrates a position which is typical of positions which frequently occur during top-of-the-table play with the object white below the spot. It is difficult to give the idea of this position by a diagram, but the angle is just a little too wide to allow of the cue ball getting full on to the object white as the result of a very gentle stroke off the red. Instead, a stroke which is played so gently that the cue ball little more than reaches the white—the correct stroke when by such a stroke the white can be taken full—results in the cue ball taking the object white on the inside and remaining *just in front of it*, thus making the pot which in the ordinary way follows the cannon, and which in the ordinary way is an easy stroke, an extremely awkward stroke.

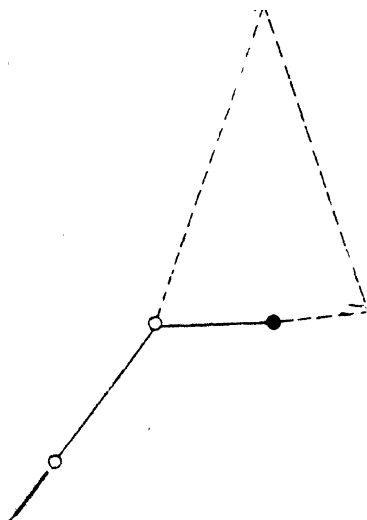
Diagram 913 illustrates the kind of position which arises from the cannon shown on Diagram 912 when the cue ball takes the object white quite gently on the inside. In order to avoid this bad position, which generally causes failure at the next stroke, the cannon must be played with just a little more pace



DIAGRAM 912.—A top-of-the-table cannon which if played too gently may give a poor position through the cue ball not getting clear of the object white after taking it on the inside. An example of the bad position that may be set up from this cannon is illustrated on Diagram 913.

than is necessary to cause the cue ball to reach the object white. In this way it will travel a couple of inches or so past the ball after hitting it, thus allowing the player to get at his ball quite easily for the next stroke.

With the red ball on the spot and the object white close to the red but below it, as in the second ideal position illustrated on Diagram 902 it has already been demonstrated that after a number of cannons and pots have been made the object white, moved an increasing distance by each successive cannon, reaches a spot which is too far removed from the red to allow of that particular method of top-of-the-table play in which the cue ball is always



914.—A top-of-the-table stroke. A cannon off the white bringing the object balls together. Red ball on the spot. Object white about 27 inches* from the top cushion and on the central line of the table. Cue ball 19 inches from the side cushion and 40 inches from the top cushion.



DIAGRAM 913.—An example of the awkward position which may be set up as the result of too gentle a stroke in the cannon position illustrated on Diagram 912. Proper cueing for the pot is impossible owing to the player having to play over the object white.

higher up the table than the object white being continued any longer, and Diagrams 909 and 910 illustrated the method of play by which in two strokes the cue ball must be brought below the object white when this ball by reason of its being a considerable distance below the red is getting out of hand for top-of-the-table play. The pot by means of which the cue ball may be placed below the object white has, of course, to be very well played in order that the cue ball may take up a good position for the cannon off the white which sends this ball up the table again. When the pot is a perfect stroke the resultant position will be very similar to that illustrated on Diagram 914, in which

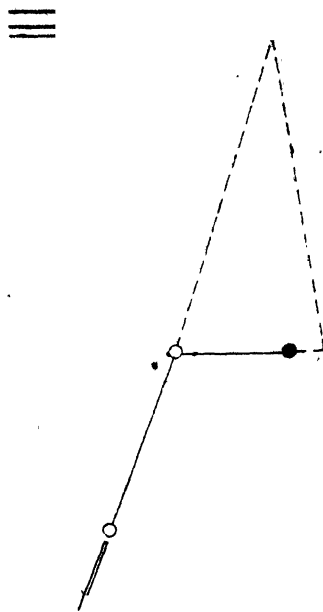
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the cannon can be made by means of a half-ball or somewhat fuller than half-ball stroke. Perfection at a stroke in which the cue ball has not only to run a considerable distance after its contact with the red, but also a very exact distance, in order to take up correct position for a cannon cannot always be expected, and consequently even with very good players the position which results from the pot illustrated on Diagram 910 will very often necessitate the cannon being played with screw or by means of a thin stroke, according as to whether the cue ball has not travelled far enough or too far to allow of the cannon being made by means of a half-ball or an approximately half-ball stroke.

Diagram 915 illustrates the kind of position which may result from the pot when the cue ball does not travel quite far enough, and Diagram 916 that which may be set up when the cue ball travels a little too far to leave the best possible position.

With the balls to the measurements given under Diagram 914 the cannon should be played by means of a somewhat fuller than half-ball stroke and with sufficient strength to cause the object white to rebound from the side cushion as indicated by the intersected line on the diagram. The contact which the cue ball makes with the object white must be of such a nature as to give the object white a line of travel very similar to the one indicated on the diagram. When the object white is given this line of travel and the stroke is played with good strength the resultant position is generally a good one, owing to the fact that the object balls as a rule come to rest close to one another. The *exact* position that will be left as the result of a well-played stroke cannot, of course, be foretold—this is true of all cannon positions in which the cannon has to be played with sufficient strength to cause all three balls to travel some considerable distance, nevertheless the bringing of the object balls together by means of a stroke of the nature of the one illustrated on Diagram 914 nearly always results in good position for the next stroke.

With the balls to the measurements given under Diagram 915 a very good stroke indeed is required to keep the balls with any certainty in position for top-of-the-table play. It sometimes occurs that position at the top of the table is retained in a manner quite different from the way intended—for lucky strokes occasionally occur even in top-of-the-table play—and a cannon from the location of the balls shown on Diagram 915 may sometimes give quite a good



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DIAGRAM 915.—A top-of-the-table stroke. A cannon off the white by means of a slow screw. A difficult stroke. A perfectly-played stroke causes a gentle kiss to take place between the object balls. Position of the object balls as on Diagram 914. Cue ball 15 inches from the side cushion and 36 inches from the top cushion.

1, which is a fluke one in that it has not been played for. The correct manner of playing the cannon to retain top-of-the-table position is by means of a slow screw as illustrated on the diagram. The cue ball must cannon full on to the red and must travel to it with little more pace than is necessary to reach it, and the object white must be given such direction and pace as will cause it to rebound from the cushion and gently kiss the red, which ball has been moved only a very short distance from the spot. In this way all three balls will come to rest within a short distance from one another. As already stated the stroke is a difficult one. Indeed, it is one that very good players often fail at as regards getting the position played for. In order that the object white may be given a correct line of travel it has to be taken very nearly full, and unless a player is very good at slow screws he will either use too much strength for the stroke—and in this way impart too much pace to the object white—or else in attempting to play the stroke with correct strength he will miss the cannon through an insufficiency of screw.

With the balls to the measurements given under Diagram 916, the cannon is a considerably thinner than half-ball stroke. The cannon itself presents no difficulty, but in order that good position may be retained by its means the cue ball must take the red on the outside and considerably thinner than half-ball, and in addition to this the stroke must be played with a fair amount of pace. The intersected lines indicate the good line of travel given to the object balls when the cue ball makes a good contact with them, and likewise how they may come to rest close to each other when the strength of the stroke has also been good.

Diagram 917 illustrates a position which often occurs in top-of-the-table play. With the balls to the exact measurements given under the diagram it will be found that the cue ball cannot be made to cannon full on to the object white as the result of an ordinary stroke which sends the red to the vicinity of the pocket. A plain half-ball stroke causes the cue ball to take the object white on the inside, and thus no cover can occur. Should the cue ball, however, come to rest too close to the object white, the pot may be rendered very awkward owing to the object white impeding proper cueing. In playing this cannon, therefore, care must be taken not to use too slow a stroke. The continuous line on the diagram indicates how the cue ball should get clear away from the object

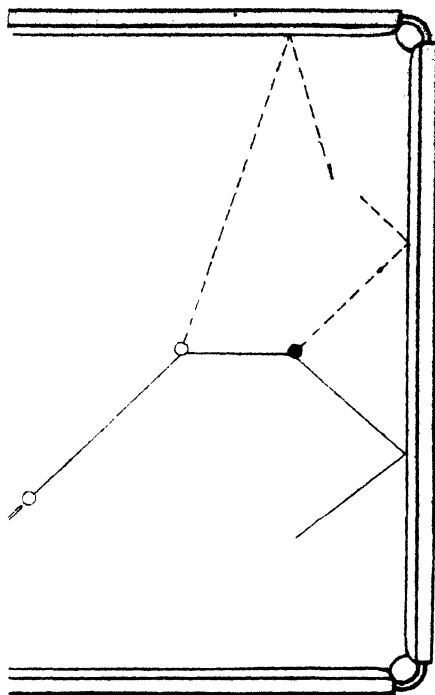


DIAGRAM 916.—A top-of-the-table stroke. A cannon off the white by means of a stroke which causes the cue ball to make a thinnish contact with both object balls. A well-played stroke causes the object balls to come to rest close to each other. Position of the object balls as on Diagram 914. Cue ball $21\frac{3}{4}$ inches from the side cushion and 42 inches from the top cushion.

white after its contact with it, in order that it may be got at quite easily for the next stroke.

Diagram 918 illustrates a position that often occurs in top-of-the-table play. It is frequently set up as the result of a pot which has been played with too much pace to leave the cue ball in correct position for the cannon. The cannon is a thin one and should be played with check side and with a fair amount of pace, in order that the red may be made to travel to the vicinity of the pocket. The stroke is a more difficult one when it has to be played from the other side of the table, owing to the use of the rest being necessitated, unless the player can play a left-handed stroke. Good position may be



DIAGRAM 917.—A cannon which places the red close to the pocket. The stroke should be played with sufficient pace to leave the cue ball some little distance from the white in order to allow of free cueing for the next stroke. Red ball on the spot. Object white touching the top cushion and 28½ inches from the nearest point on the side cushion. Cue ball 23 inches from the side cushion and 37 inches from the top cushion.

set up as the result of a well-played stroke.

Diagrams 919 and 920 are illustrative of a position which often occurs at the top of the table, and show the wrong and the right way of playing the cannon. When the cannon is played by means of a ball-to-ball stroke a cover generally occurs, for the cue ball, by reason of its taking the object white on the outside, places this ball between it and the red. Diagram 919 illustrates the very bad cover that will often set up as the result of a

DIAGRAM 918.—A thin cannon played with sufficient pace to cause the red to travel to the vicinity of the pocket. Red ball on the spot. Object white touching the cushion and right behind the spot. Cue ball 17½ inches from the side cushion and 43 inches from the top cushion.

happen that when this stroke a cover a cannon may be on by

THE STROKES OF THE GAME.

of a run-through stroke off the top cushion, but a player is always taking a grave risk when he does nothing to prevent a cover taking place.

Diagram 920 shows how the cover may be prevented. The direct cannon necessitates a somewhat thinner than half-ball contact, but if instead a half-ball stroke with plenty of right side be used the cannon may be made off the cushion, as illustrated on the diagram. When the stroke is correctly played the red will be placed in good position for a pot and the object white will be moved towards the spot.

Diagram 921 illustrates another cannon at the top of the table in which use is made of the top cushion. With the balls to the measurements given under the diagram a ball-to-ball cannon is quite a simple stroke, but such a



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with the balls to the measurements given under Diagram 919. No cover can occur provided that the cue ball gets well on to the object white after its rebound from the cushion.

DIAGRAM 919.—An example of a position which often occurs at the top of the table and the bad cover that may be set up when the cannon is played by means of a ball-to-ball stroke. The correct way of playing the cannon is shown on Diagram 920. Red ball on the spot. Object white on the central line of the table and about 5 or 6 inches from the cushion. Cue ball 24 inches from the side cushion and 26 inches from the top cushion.

stroke does not give good after-position. The good position which may be set up as the result of a cannon off the cushion is indicated on the diagram. A correct stroke places the red in position for an easy pot and leaves the object white in the neighbourhood of the spot.

Diagram 922 shows a location of the balls which, with slight variations which do not affect the stroke to be played, is of common occurrence in top-of-the-table play. Here, a slow pot

non, but such a position is a poor one, for the cannon would have been very well played indeed in order to

case, top-of-the-table position would be immediately lost, for with the cue ball well above the red as the result of the slow pot the cannon which follows this pot must send the red down the table. The correct way of playing the pot is illustrated on the diagram. The continuous line drawn from the red ball indicates the distance which the cue ball should travel. Naturally the stroke has to be very well played in order that the cue ball may travel the correct distance. Should it travel appreciably farther than as indicated on the diagram, or should it come to rest some distance short of the termination of the line on the diagram the resultant position will not be a good

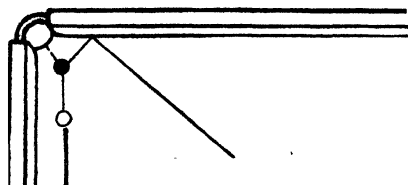


DIAGRAM 921.—A cannon off the top cushion placing the red close to the pocket and keeping the object white above the spot. A better stroke than a ball-to-ball cannon. Red ball $12\frac{3}{4}$ inches from the top cushion and $27\frac{1}{2}$ inches from the side cushion. Object white on the central line of the table and 4 inches from the top cushion. Cue ball 30 inches from the side cushion and 34 inches from the top cushion.

one—at least as regards top-of-the-table play.

Diagram 923 shows the resultant position from the pot when the cue ball travels as indicated on Diagram 922, and also illustrates the correct way of playing the run-through cannon which follows the pot. This cannon must be played without much strength in order that the red may be placed near the pocket. Left side on the cue ball—running side off the cushion—causes the cue ball to cannon well on to the outside of the object white, and in this way any chance of a cover for the next stroke is avoided.

Diagram 924 illustrates a position which, with slight variations which do

DIAGRAM 922.—A top-of-the-table stroke. Getting below the spot in order to leave position for a run-through cannon by means of which the red ball may be kept at the top-of-the-table. Object white $3\frac{1}{2}$ inches from the top cushion and $26\frac{1}{2}$ inches from the side cushion.

not affect the kind of stroke to be played, not infrequently occurs at the top of the table. The run-through cannon which must be played here is not a difficult stroke, just as a stroke, for players at all above the average, but as a positional one it is anything but easy. The perfect position which can be gained by means of a very correct stroke is indicated on the diagram. In order to get this position or something like it—for it is impossible to twice get *exactly* the same leave in a stroke of this nature—the stroke must be played with as little

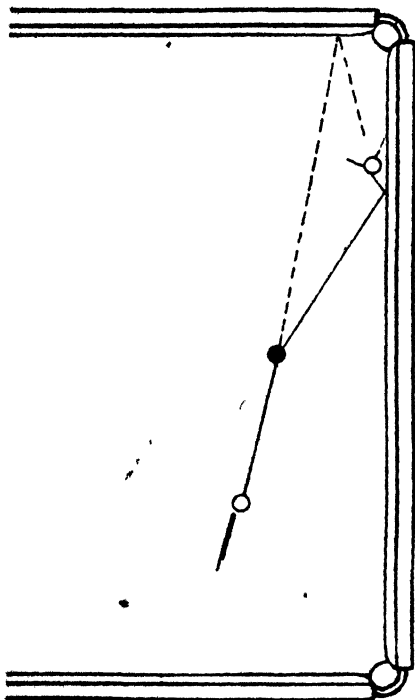


DIAGRAM 924.—A top-of-the-table position. The likelihood of a cover occurring is avoided by causing the cue ball to take the cushion a little in advance of the object white. The cover which is likely to be set up when the cue ball cannons direct and full on to the white is illustrated on Diagram 925. Red ball on the spot. Object white $\frac{1}{2}$ inch from the top cushion and $19\frac{1}{2}$ inches from the nearest point on the side cushion. Cue ball $16\frac{1}{2}$ inches from the top cushion and 19 inches from the side cushion.

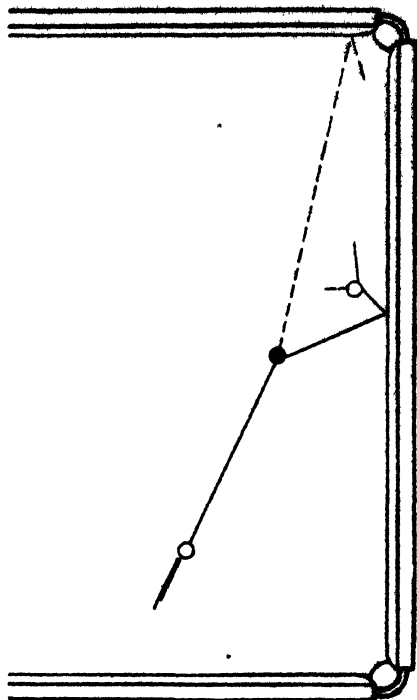


DIAGRAM 923.—The position which is set up when the cue ball travels as indicated by the continuous line on Diagram 922. Top-of-the-table position may be retained by means of a run-through stroke which places the red near the pocket. Red ball on the spot. Object white $3\frac{1}{2}$ inches from the top cushion and $26\frac{1}{2}$ inches from the side cushion. Cue ball $16\frac{1}{2}$ inches from the side cushion and $21\frac{1}{2}$ inches from the top cushion.

strength as is compatible with the making of the cannon, and the cue ball must be given the maximum amount of run for the strength at which the stroke is played. Also, the cannon must be made off the cushion, as shown on the diagram, and consequently the cue ball must be struck with left side.

The very bad position which often results from this cannon when the cue ball gets full or nearly full on to the object white without taking the top cushion at all is shown on Diagram 925. The cue ball, by reason of its having travelled to the white with little more strength than necessary to reach

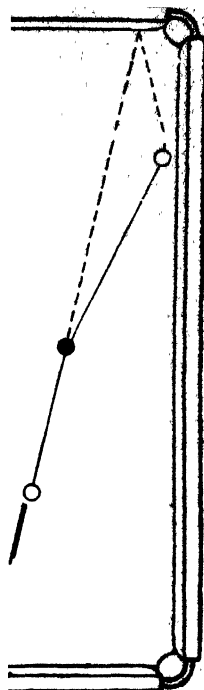
it, comes to rest quite close to it, and as the red, when the strength of the stroke has been good, only travels about up to the object white, the resultant position is a very bad cover. In fact, as the red must be taken slightly fuller in order to cannon direct on to the white than is the case when the cannon is made off the cushion—as illustrated on Diagram 924—it strikes the side cushion nearer to the pocket in the former case than it does in the latter, and consequently when the cannon is made full on to the object white the red ball will often get right behind the white, and thus the three balls may be left quite close together and nearly in a line with the object white in the middle. This result is illustrated on Diagram 925.

This run-through cannon illustrated on Diagram 924 is a very fine example of the difficult positional strokes which the top-of-the-table player so often has to play. The player who is well advanced in the game recognises the cover which may easily occur as the result of this cannon and of course attempts to avoid it, but very frequently the amateur who is good enough for an occasional hundred break gets the very cover he attempted to avoid as the result of a stroke of the nature of the one under discussion.

Or, as will occasionally happen, through attempting to cannon off the cushion he misses the cannon altogether by reason of the cue ball striking the cushion a little too much in advance of the white. In order to get perfect position the cue ball must take the cushion a little in advance of the white, and in playing for this it is very easy to take the cushion a little too soon through not getting quite full enough on to the red. When the cannon is played correctly enough as regards contact with both balls, but with a little too much pace the resultant position may easily be bad as a kiss will generally occur, and often enough the kiss will result in a cover.

Diagram 926 shows a position which is typical of positions which constantly occur at the top of the table. The cannon is a screw and the red should be made to travel across the table as indicated by the intersected line on the diagram. In order that the red ball may be given a good line of travel the cue ball must take it very nearly full, so that the cannon is really a stun stroke. A well-played stroke not only places the red in good position for a pot, but also moves the white but little, as the stunned cue ball travels from the red to the with very little speed.

927 illustrates a variation of the stroke shown on Diagram 926. a very full contact with the red will give this ball a good line of



924 set up when instead of the cannon being made off the cushion, as illustrated on Diagram 924, the cue ball travels straight from the red to the white. Position of the balls exactly as on Diagram 924.

travel across the table and at the same time cause the cue ball to travel to the object white with very little pace. When the contact with the first ball has to be a very full one this stun stroke should be played with check side, for the effect of check side is to lessen screw, and thus a somewhat fuller contact can be made without overscrewing the stroke than is possible with a running-side or even a plain-ball stroke.

Diagram 928 illustrates a position which is representative of many others occurring at the top of the table. Screw is required for the cannon, but though the stroke is quite easy just as a stroke, the amount of screw has to be very nicely gauged in order that good

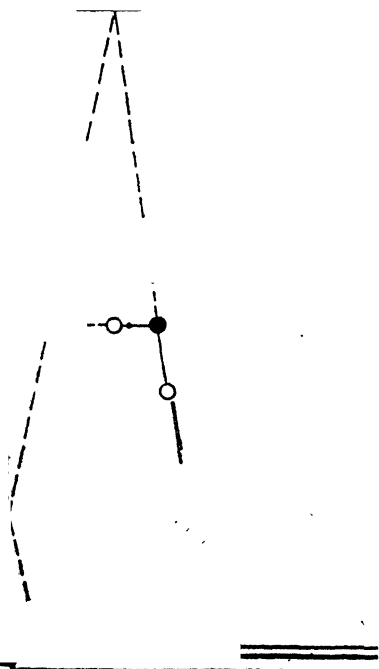


DIAGRAM 927. — A top-of-the-table stroke. Doubling the red across the table to the vicinity of the pocket and cannoning full on to the object white. Red ball 15 inches from the top cushion and on the central line of the table. Object white 10 inches from the cushion and on the central line of the table. Cue ball 16½ inches from the top cushion and 26 inches from the side cushion.

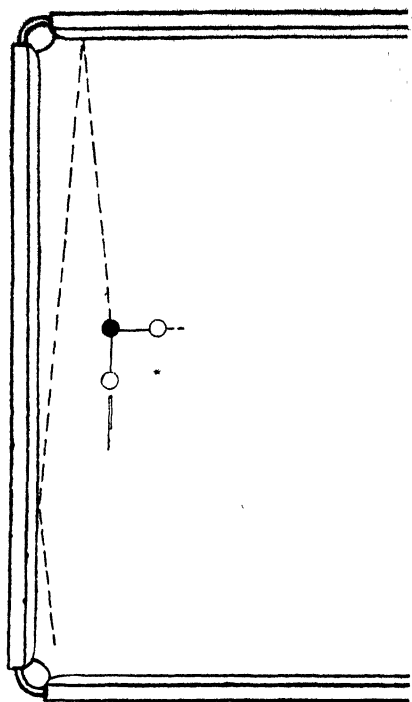


DIAGRAM 926. — A top-of-the-table stroke. Doubling the red across the table to the vicinity of the pocket and cannoning quite gently on to the object white. Red ball 6½ inches from the top cushion and 30 inches from the side cushion. Object white 12 inches from the top cushion and 30 inches from the side cushion. Cue ball 6 inches from the top cushion and 31½ inches from the side cushion.

position may be left to continue with. Very little strength must be used in order to prevent loss of top-of-the-table position by reason of too strong a rebound of the object white from the top cushion. Also, the cue ball must take the red slightly on the outside in order to leave it well placed for the pot which should follow the cannon. When the strength of the stroke and the contact with the red are both very good the red will travel more or less as indicated by the intersected line on the diagram, and the cue ball will come to rest close to the spot previously occupied by this ball. The stroke is not nearly as easy as it may seem, for

should it be just slightly overscrewed the cue ball will take the red too thinly on the outside, and when this happens the red will be moved very little and the cue ball will get below it, thus leaving no pot to continue with. If, on the other hand, through a slight insufficiency of screw the red is taken on the inside it will be sent down the table and the cue ball will travel towards the top cushion.

Diagram 929 illustrates the kind of bad position which may be set up when the cue ball takes the red on the inside.

Diagram 930 illustrates another slow screw. With the balls to the measurements given under the diagram the red should be made to kiss the object white, for in this way it will be prevented from travelling past it. The cannon must be

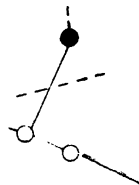


DIAGRAM 928.—A top-of-the table stroke. A slow-screw cannon. One of the very many bad positions which may be set up as the result of a slight inaccuracy in the playing of this stroke is illustrated on Diagram 929. Red ball on the spot. Object white $7\frac{1}{2}$ inches from the top cushion and $24\frac{1}{2}$ inches from the side cushion. Cue ball the same distance from the top cushion as the red and $21\frac{1}{2}$ inches from the side cushion.

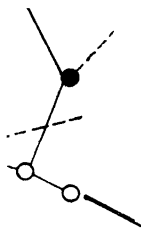


DIAGRAM 929.—An example of the bad position which may be set up when the cue ball takes the red on the inside.

made with as little strength as possible in order that the red may kiss the object white quite gently. When the stroke is correctly played the cue ball and the red will reach the object white almost simultaneously, and in this way all three balls will be left close together and thus very good position for the next stroke will be insured.

Diagram 931 shows the balls situated exactly as on Diagram 895. Here, there is a choice of three different top-of-the-table strokes, viz., a screw cannon

illustrated on Diagram 731 in the chapter on NURSERY CANNONS—a pot to leave

position for a cannon—illustrated on Diagram 895—and a cannon to leave position for a pot. This last stroke, illustrated on Diagram 931, is constantly played by professional players, but it is a difficult one owing to the extreme accuracy of contact with the red which is necessary in order to avoid a kiss. Owing to the cue ball's distance from the red a fair amount of pace must be used to get sufficient screw, nevertheless the stroke must not be played at high pace, otherwise the after-position will be obscure. When the stroke is played quite cor-

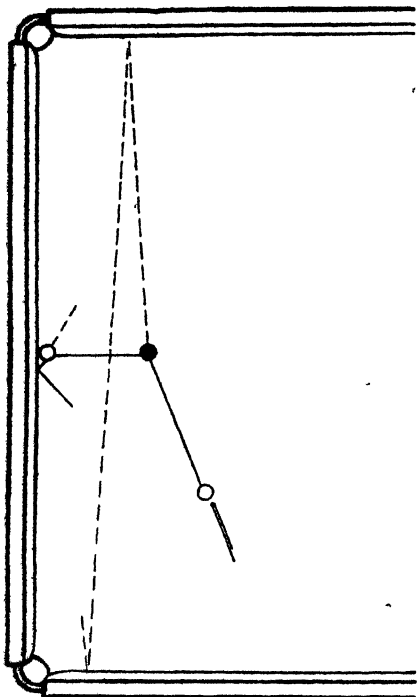


DIAGRAM 931.—A top-of-the-table stroke. A screw cannon doubling the red across the table to the vicinity of the pocket. A difficult stroke. An example of the position-destroying kiss which generally results from an imperfectly-played stroke is given on Diagram 932. An alternative stroke is on Diagram 895. Red ball on cushion and right behind the spot. Cue ball 18 inches from the top cushion and 18½ inches from the side cushion.

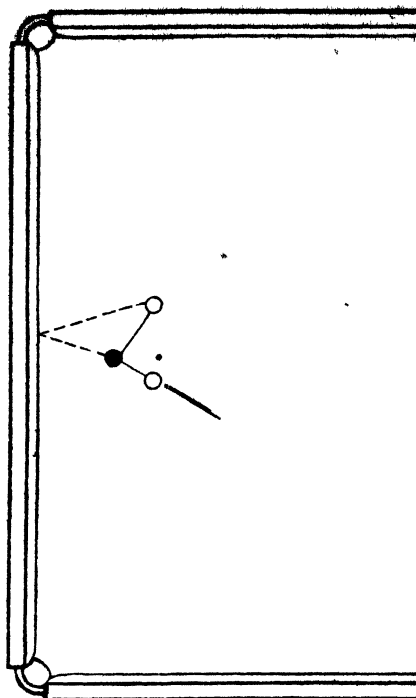


DIAGRAM 930.—A top-of-the-table stroke. A slow-screw cannon. Red ball 7½ inches from the top cushion and on the central line of the table. Object white 11½ inches from the top cushion and 28¾ inches from the side cushion. Cue ball 11½ inches from the top cushion and 31¾ inches from the side cushion.

rectly as regards strength the red ball must necessarily rebound from the first cushion with considerable speed and consequently should it kiss either the cue ball or the object white the position which results from the stroke will be entirely relegated to chance. Occasionally a kiss will give very good position, but generally when the red catches either of the white balls the resultant position will be indifferent if not very bad.

Diagram 932 illustrates the bad result of an actual stroke at the table, the ball having travelled down the

order to avoid any possibility of a kiss the red ball must be made to strike the

cushion at a point quite a long from the pocket, as illustrated by the intersected line on Diagram 931, and the cue ball must travel to the object white without much pace in order that neither it nor the white may rebound more than a short distance from the cushion. Naturally, if either ball rebounds a considerable distance from the cushion a kiss may easily take place, even though the red ball has been given correct direction. When the stroke is so well played that the cue ball catches the object white *full in the face* all danger of a kiss is avoided, provided of course that the red has been given a correct line of travel, but the kiss will always be avoided when the red travels correctly, even though the cue ball may not cannon full on to the object white, provided that it travels to it without much pace. In playing this stroke care must be taken not to cannon on to the far side of the object white, otherwise a cover may possibly occur. With the balls situated as shown on Diagram 931 the easiest way of getting the cannon is by means of a very full contact with the red, but this is the very kind of contact which causes the kiss. In order to give the red the good line of travel indicated on Diagram 931 it must be taken considerably less full than were the cannon only being played for, though still somewhat fuller than half-ball. With the balls at the angle shown on the diagram a screw cannon without much strength is a more difficult stroke when the red is taken only a little fuller than half-ball than it is when played by means of a nearly full contact with the object ball, and it is for this reason that the positional stroke illustrated on this diagram is anything but an easy one for the average good amateur. Occasionally, when playing this stroke, even though the red has been taken too full the kiss may be avoided by reason of its passing *between* the two white balls, but when this happens an element of luck has entered into the stroke.

Diagram 933 illustrates a position which is typical of others of the same nature which frequently occur at the top of the table. With the balls to the measurements given under the diagram the player has the choice of a pot, which if correctly played gives good position for a cannon, or of a screw cannon which keeps the red at the top of the table when the cue ball makes a good contact with this ball. The pot is a much more difficult stroke than the cannon for not only is the angle an awkward one but the pocket is a rather blind one, and in addition to this the strength of the stroke has to be very nicely gauged in order that the cue ball may take up correct position for the cannon.

on the other hand, is an easy stroke owing to the object

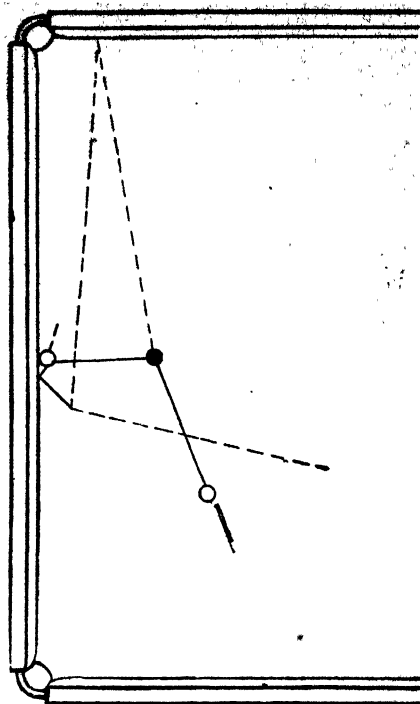


DIAGRAM 932.—An example of the kiss that generally takes place when in attempting the stroke illustrated on Diagram 931 the red ball is taken too full.

being so near the cushion. In playing this cannon, however, care must be taken that the red does not go into the pocket, for the after-position which results from the double shot is generally very bad and often quite hopeless. All players who have practised top-of-the-table play to any extent are well aware that in many positions it is nearly as difficult to keep the red out of the pocket when the five-shot has to be avoided as it is to put the ball in when the angle for the pot is an awkward one. So much so is this the case that even players like Stevenson and Reece occasionally, though of course only very infrequently, lose position at the top of the table by reason of their getting a five-shot when they have played to keep the red out of the pocket. In fact, it is not going too far to say that in order for any player to excel at top-of-the-table play he must not only be able to put the red in with certainty and ease whenever the pot is at all reasonably on, but he must also be equally certain of preventing its undesired entrance into the pocket, or any unwished-for contact with its angles. Of course, as potting a ball demands accurate striking the more proficient a player is at this stroke the more certain will he be of keeping the red out when he does not want it to enter the pocket. In the stroke illustrated on Diagram 933 the red has not been taken fuller than half-ball, and in this way the pocket and its angles have been avoided. When the red ball strikes the side cushion at or close to the point indicated on the diagram it will travel across the table more or less as indicated by the intersected line, provided that it does not come into contact with one of the white balls. When the cue ball gets well behind the object white, as shown on the diagram, a kiss may be avoided, for the white balls travel away from the cushion, thus allowing the red to pass between them and the cushion. Even when a kiss takes place good position will often result from the stroke, for when the red ball travels on the line indicated on the diagram it will generally be nearer the top cushion than the ball which it kisses, and when this is so the red is kept at the top of the table as the result of the kiss. This cannon to cause the red to take the side cushion some little distance from the pocket should be played with running side in order that the cannon may be made off the top cushion.

Diagram 934 shows the balls in exactly the same position as on Diagram 933 and illustrates another way of keeping the red at the top of the table. Here,

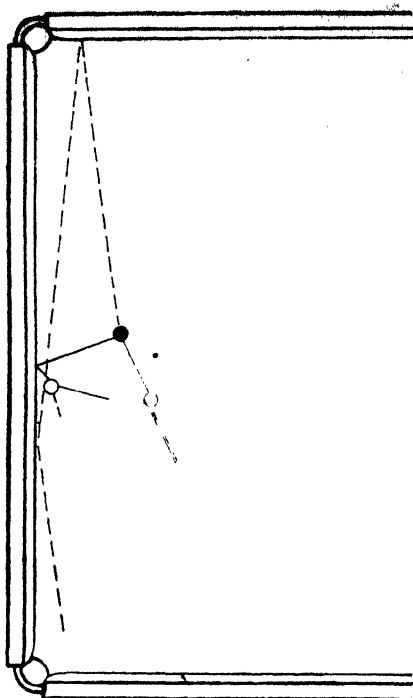


DIAGRAM 933.—A top-of-the table stroke. A screw cannon off the top cushion doubling the red across the table to the vicinity of the pocket. An alternative stroke is illustrated on Diagram 934. Red ball 8 inches from the top cushion and 32 inches from the side cushion. Object white 1 inch from the top cushion and 30 inches from the side cushion. Cue ball 11½ inches from the top cushion and 27½ inches from the side cushion.

the contact with the red is full enough to cause this ball to take the top cushion sufficiently near the pocket to cause it to be thrown on to the angle of the side cushion. When the red strikes the side cushion angle at the correct point it will be thrown across the table more or less as indicated by the intersected line on the diagram. The very full contact which the cue ball must make with the red to give it the line of travel shown on the diagram allows of the cannon being made direct on to the object white and also allows of the stroke being played without much pace. This being so it is possible by means of a very well played stroke to leave all the balls close together, for when the cue ball cannons full and gently on to the white the red ball travelling on the line indicated on the diagram will kiss the cue ball, and when the kiss is a gentle one the balls will be bunched. High-class players often make use of the angles of a pocket in the manner illustrated on Diagram 934, but except when the cue ball and the object ball are pretty near the pocket correct use of its angles is anything but easy. With the red ball as far from the pocket as it is in the position shown on Diagram 934 there are several different ways in which the stroke may fail—as regards the after-position—when the cue ball's contact with the red is not quite as correct as the making of the stroke demands. For example, should the red take the top cushion a little farther from the pocket than as shown on the diagram it may altogether miss the angle of the side cushion and when this happens it must travel down the table. Nor is it necessary that the red should entirely miss the side cushion angle for it to travel down the table. A rebound from the top cushion on to that point of the side cushion which is just the commencement of the angle will also cause the ball to travel down the table. Or the red may enter the pocket as the result of a contact which is just not quite full enough to cause it to strike the angle of the pocket in the manner illustrated on the diagram, and when this happens the leave will in all probability be a bad one. Again, should the red travel straight to the side cushion angle and strike it at a point close to the fall of the slate it will be thrown on to the top cushion angle and thence down the table.

Diagram 935 indicates what happens when the red takes the side cushion angle first. Of course, the red ball's line of travel after its contact with top cushion angle will vary with every different point of contact with angle. The nearer to the fall of the slate the angle is taken the closer to

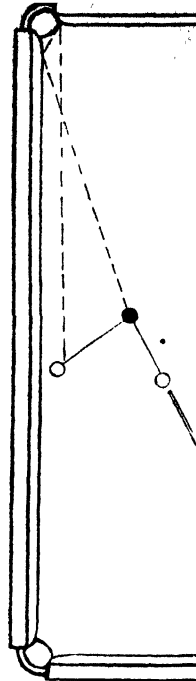


DIAGRAM 934. A top-of-the-table stroke. A screw cannon in which use is made of the angles of the pocket to bring the red to the white. Great accuracy of contact is essential in this stroke. An example of the bad leave which results from the side cushion angle instead of the top cushion angle being taken first is given on Diagram 935. Position of the balls as on Diagram 933.

side cushion will the ball travel down the table, and conversely, the farther from the pocket the angle is struck the more into the open will the ball travel, but in every case it will travel *down* the table and thus top-of-the-table position will be ended. The red ball may even travel down the table though striking the top angle first. This happens when the angle is taken very close to the fall of the slate, because in this case the ball is thrown on to a point on the side cushion angle also very close to the fall of the slate, whence it is thrown back on to the top cushion angle and thence down the table.

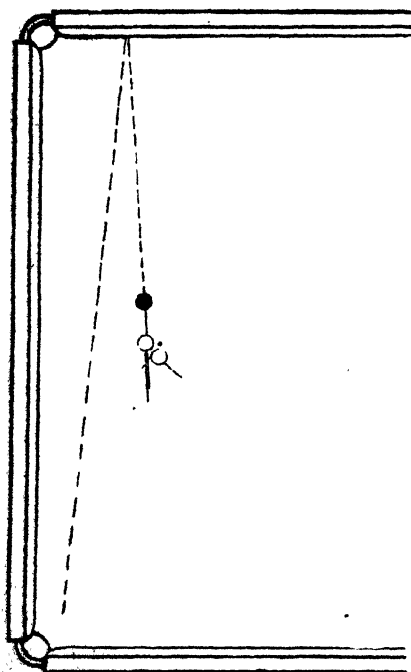


DIAGRAM 936.—A top-of-the-table stroke. the red

ball $9\frac{1}{2}$ inches from the top cushion and $29\frac{1}{2}$ inches from the side cushion. Object white $11\frac{1}{2}$ inches from the top cushion and $32\frac{1}{2}$ inches from the left side. Cue ball $9\frac{1}{2}$ inches from the top from the left side

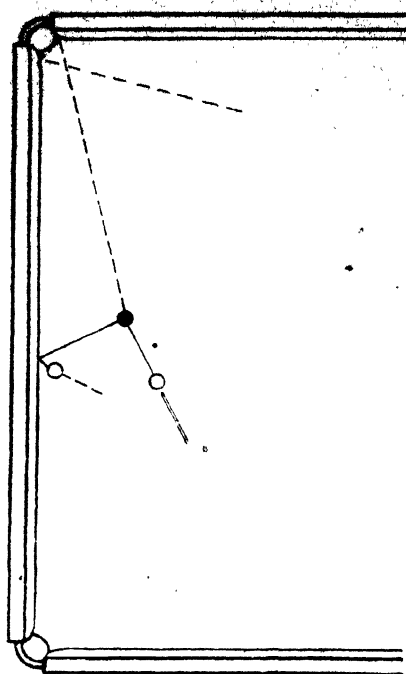


DIAGRAM 935.—An example of the bad position which is likely to be set up when in playing the stroke illustrated on Diagram 934 the red takes the side cushion angle first instead of the top cushion angle.

Diagram 936 shows a top-of-the-table position wherein the stroke to play is a screw cannon. The red could, of course, be potted, but as it would not afterwards spot owing to the object white being so close to the spot the stroke would be an unsound one. A correctly-played cannon causes the red ball to travel more or less as indicated by the intersected line on the diagram. With the balls to the measurements given under the diagram the cue ball should not be made to recoil full on

be set up. Especially is this happen should the cue ball little more than reach the object white. In the stroke illustrated on Diagram 936 the cue ball takes the object white well to one side and thus the risk of a cover is

avoided. Playing to screw back on to one particular part of the second object ball as a rule makes a shot very much more difficult than when playing to recoil on to any part of the ball, but this is not the case with the screw-back cannon illustrated on Diagram 936, for when playing to take the object white on the edge the stroke is a *straight* screw-back, whereas to take the white any other way it has to be an angle screw.

Diagram 937 illustrates a difficult positional stroke often played by very good players. The pot is an easy stroke, and with the object white where it is it can be played in such a way as to leave the cue ball high up the table and well placed for a simple ball-to-ball cannon off the white by means of which the red could be placed in position for a pot into the other pocket. This method of play, however, at once puts an end to top-of-the-table play, for the ball-to-ball cannon sends the object white down the table. In order that top-of-the-table position may be retained the cue ball must get *below* the object white in the manner indicated on the diagram. The difficulty of the stroke lies in causing the cue ball to travel just the correct distance. There is very little latitude as to the distance which it may run without loss of top-of-the-table position. Unless it comes

to rest some little distance lower down the table than the spot on which the object white lies top-of-the-table position is at an end, and should it travel considerably farther than as indicated on the diagram the same will generally be the case. The continuous line on Diagram 937 indicates about the very best position—as regards the angle which it will afterwards make with the object white and the red—which the cue ball can take up, and when the result of the pot is as shown on this diagram the next stroke will be a run-through cannon. Should the cue ball, however, travel some little distance farther than as shown on the diagram the resultant leave may be of such a nature as to allow of retention of top-of-the-table position by means of a cannon off the top cushion.

Diagram 938 illustrates the position which is set up as the result of the pot on Diagram 937 when the cue ball travels exactly as indicated by the continuous line on this diagram. Here the run-through cannon is not a difficult for a good player, but a very nice stroke is required in order to retain position. The strength of the stroke has to be very well gauged that the object white may travel about the distance indicated

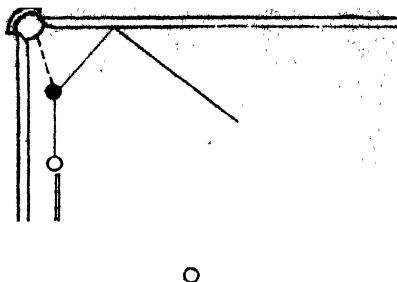


DIAGRAM 937.—A top-of-the-table stroke. A pot to leave position for a run-through cannon. Red ball $2\frac{1}{2}$ inches from the top cushion and $8\frac{1}{2}$ inches from the side cushion. Object white $17\frac{1}{2}$ inches from the top cushion and $25\frac{1}{2}$ inches from the side cushion. Cue ball $2\frac{1}{2}$ inches from the top cushion and 18 inches from the side cushion.

THE STROKES OF THE GAME.

intersected line and the cue ball must cannon very full on to the red in order that this ball may travel forward with the good direction shown on the diagram. When the cue ball gets quite full on to the red it will come to rest almost immediately after its contact with it, provided that the stroke has been played with correct strength as regards the distance which the object white must be made to travel, and in this way both object balls may be left in front of the cue ball in the manner indicated on the diagram.

Diagram 939 shows a position which as regards the stroke to be played is of

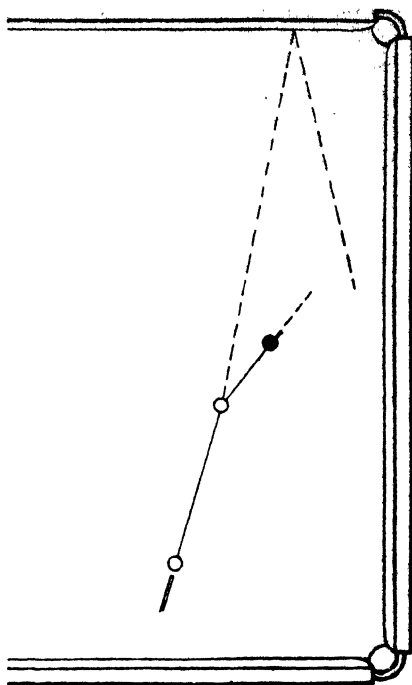


DIAGRAM 938.—An example of a top-of-the table position which may be obtained from the stroke illustrated on Diagram 937. Position may be further retained by means of a good-strength run-through cannon. Red ball on the spot. Object white $17\frac{1}{2}$ inches from the top cushion and $25\frac{1}{2}$ inches from the side cushion. Cue ball $16\frac{1}{2}$ inches from the side cushion and 22 inches from the top cushion.

run-through cannon to place the red for a pot. An alternative and generally safer positional stroke is illustrated on Diagram 941. Red ball 7 inches from the top cushion and 22 inches from the left side

cushion and 27 inches from the side cushion. Cue ball $7\frac{1}{2}$ inches from the top cushion and 25 inches from the side cushion.

common occurrence at the top of the table. With the balls to the measurements given under the diagram there are two ways of playing the run-through cannon, viz., by a gentle stroke which places the red in position for a pot into the right pocket, as indicated on this diagram, and by a stronger one which doubles it across the table to the vicinity of the left pocket as illustrated on Diagram 941. As the result of a correctly-played slow

well placed for a pot, but an easy cannon off the white may also be set up, for when this run-through

cannon is played without much strength the cue ball can only cannon quite gently on to the white and consequently it cannot move it very far and must itself come to rest quite close to the spot previously occupied by it. This slow stroke is, however, a rather dangerous one to play, as unless it is very well handled a cover may easily be set up.

Diagram 940 illustrates the very bad cover which may result when the cue ball gets very full on to the white after travelling to it with very little more pace than is necessary to reach it. Bad position also often arises from this run-through cannon when the player plays to leave position for a pot into the right pocket, for should the stroke be played with a little too much

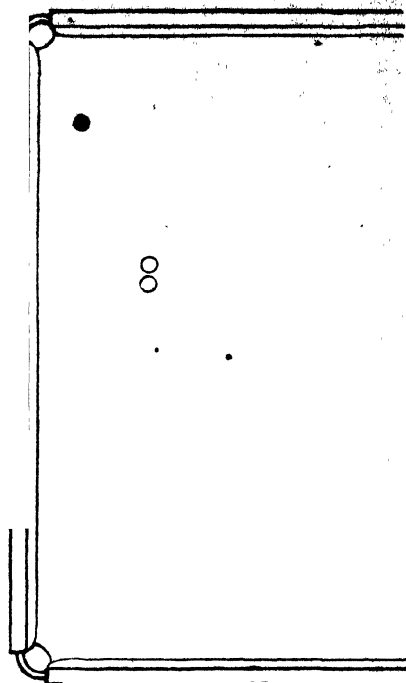


DIAGRAM 940.—An example of the very bad cover which may be set up when in attempting the stroke illustrated on Diagram 939 the cue ball cannons quite gently and full on to the object white.

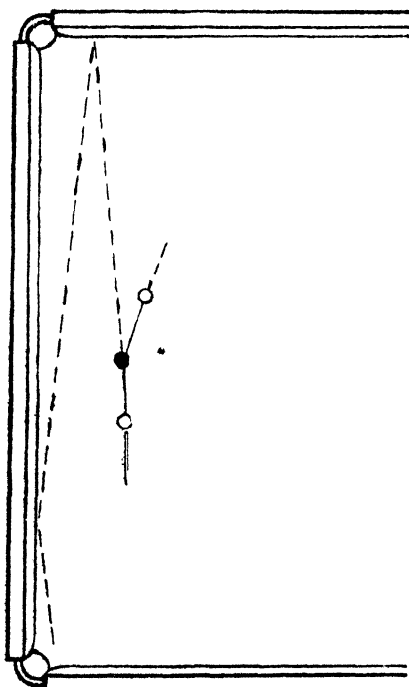


DIAGRAM 941.—A top-of-the-table stroke. A run-through cannon doubling the red across the table to the vicinity of the pocket. Generally a safer positional stroke than the run-through cannon illustrated on Diagram 939. Position of the balls as on Diagram 939.

strength the red may rebound too far from the side cushion to leave a pot. The strength which is necessary to leave the red for a pot does not allow of the cue ball travelling to the object white with much pace, and consequently when the strength is correct for the pot a cover is likely to occur should the cue ball get at all full on to the object white.

Diagram 941 illustrates the safer way of playing the cannon. By doubling the red across the table to the other pocket no cover can occur, and in addition to this the ball can be placed closer to the pocket than when playing the stroke illustrated on Diagram 939.

of-the-table run-through

is a variation on Diagram 941. Here, the only thing to play for is to double the red across the table to the vicinity of the pocket, as indicated by the intersected line on the diagram. Although the stroke has to be played with a fair amount of pace in order that the red may travel nearly twice across the table the almost full contact which is necessary for the cannon takes so much pace out of the cue ball that the object white is not moved very far when the strength of the stroke, as measured by the distance which the red ball travels, is correct.

Diagram 943 illustrates another run-through cannon at the top end of the

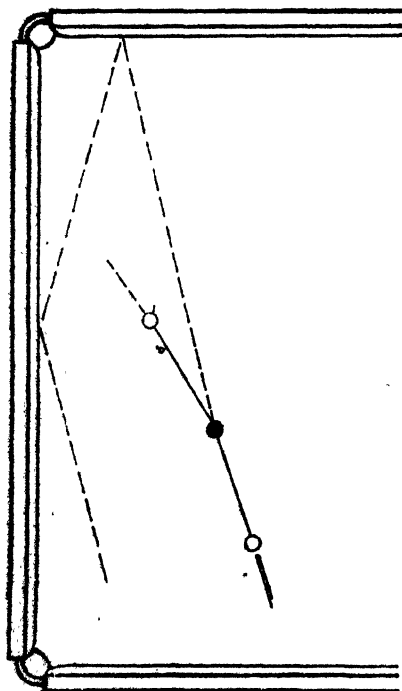


DIAGRAM 943.—A top-of-the-table stroke.

A run-through cannon placing the red for a pot. Red ball $17\frac{1}{2}$ inches from the top cushion and $24\frac{1}{2}$ inches from the side cushion. Cue ball $11\frac{1}{2}$ inches from the top cushion and $31\frac{1}{2}$ inches from the side cushion.



DIAGRAM 942.—A top-of-the-table stroke. A run-through cannon doubling the red across the table to the vicinity of the pocket. Red ball $6\frac{1}{2}$ inches from the top cushion and 19 inches from the side cushion. Object white $11\frac{1}{2}$ inches from the top cushion and 31 inches from the side cushion. Cue ball 4 inches from the side cushion and $6\frac{1}{2}$ inches from the top cushion.

table by means of which the red may be doubled across the table and placed in position for a pot. The stroke is very much the same as the one illustrated on Diagram 942 except that the red cannot be placed close to the pocket. The making of the cannon demands that the red be taken almost full, and consequently after its rebound from the side cushion this ball must take the top cushion somewhere near its centre and then travel away from it. A good-strength stroke will, however, generally leave position for a especially when the cue ball

When the red travels a little too far to leave a pot position for an in-off may be left instead. .

Diagram 944 illustrates a difficult positional stroke at the top of the table sometimes played by very good players. With the balls placed to the measurements given under the diagram it will be found that the cannon is none too easy even if played just as a stroke, for although in order to cannon off the side cushion, as shown on the diagram, extreme side in addition to a thin contact with the red is necessary it is possible to take the red too thin for the amount of side used, and when this is the case the cannon will be missed by reason of the top cushion being struck too far from the object white. It is, however, a good deal easier to get the cannon than to retain top-of-the-table position by its means. Unless the stroke is played with little more strength than is necessary to enable the cue ball to reach the object white the red ball will rebound too far from the top cushion for the retention of

top-of-the-table position, notwithstanding the thin contact which the cue ball has made with it. In the diagram it will be noticed that the red ball does not travel as far down the table as the spot and it requires a very good stroke to prevent its travelling past it. Not only must the red be kept above the spot but the cue ball must take the top cushion some little distance from the

object white so that after cannoning on to it it may come away from it. When the stroke is played with perfect strength as regards the distance which the red ball is made to travel, should the cue ball cannon full or nearly full on to the object white it will remain close behind it owing to its having travelled to it with little more pace than was necessary to reach it, and thus in all probability a bad cover will be set up for the next stroke. The good position which may be set up as the result of a perfect stroke is indicated on the diagram.

Diagram 945 illustrates a variation of the stroke shown on Diagram 944. Here, the contact with the red has to be thinner still, but owing to the cue ball being so close to the red it is easier to take the object ball extremely thin than would be the case were the balls farther apart. Extreme side is necessary for this cannon and high-class players elevate the butt of the cue for this stroke and thus make the shot a partial massé. The cannon is possible without masséing the cue ball at all, but the contact with the red would in this case to be so exceptionally thin that in playing for such a contact there would risk of not hitting the ball at all. As the contact with the red in



DIAGRAM 944.—A top-of-the-table stroke. A very thin running-side cannon off the side cushion. Red ball on the spot. Object white touching the top cushion and $16\frac{1}{2}$ inches from the nearest point on the side cushion. Cue ball $19\frac{1}{2}$ inches from the side cushion and 22 inches from the top cushion.

has to be considerably thinner than in the cannon illustrated on Diagram 944 it is much easier to keep the red above the spot, and thus it is not necessary to cannon quite gently on to the object white. This being so the cannon can be made full on to this ball. In a position of this nature a very slight alteration in the location of either the cue ball or the first object ball may make the stroke just described either quite impossible or, on the other hand, comparatively easy. For example, were the red ball brought down the table only half an inch the cannon just described would not be possible, but were it moved half an inch up the table the cannon off the side cushion would

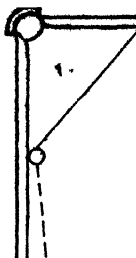


DIAGRAM 945.—An extremely thin running-side cannon off the side cushion. Red ball on the spot. Object white touching the top cushion and $17\frac{1}{2}$ inches from the nearest point on the side cushion. Cue ball $14\frac{1}{2}$ inches from the top cushion and $31\frac{1}{2}$ inches from the side cushion.

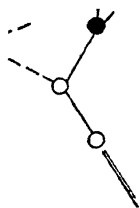


DIAGRAM 946.—A top-of-the-table stroke. A simple ball-to-ball cannon placing the object white behind the spot and the red in for a pot. Red ball on the spot, white $7\frac{1}{2}$ inches from the top cushion and $4\frac{1}{2}$ inches from the side cushion. Cue ball $11\frac{1}{2}$ inches from the top cushion and 17 inches from the side cushion.

be made a much less difficult stroke. On many tables the spot will by measurement be found to be considerably too near or too far from the top cushion. Sometimes this arises from careless marking of the position. Often, too, on account of the original spot having become very worn a new spot is placed an inch or so above or below the old one according to the fancy of the marker. When the spot is correctly placed *its centre* should be $12\frac{3}{4}$ inches from the edge of a low cushion, and of course, equidistant from each side cushion, and therefore before attempting the stroke illustrated on Diagram 945 and also many other strokes illustrated in this chapter with the balls to the measurements given

under the diagrams the correct position of the spot should be accurately determined.

Diagram 946 illustrates a position which with slight variations which do not affect the kind of stroke to be played often occurs at the top of the table. The cannon is about a half-ball stroke and when correctly played places the red in position for a pot. It should be played gently in order that the object white may be placed behind the spot, as indicated by the intersected line on the diagram. If played with considerably more strength than as illustrated on the diagram good position for a pot may still be left provided that the cue ball takes the red correctly, but the object white will be brought considerably farther down the table than is the case with the gentle stroke and thus the after-position—as regards top-of-the-table play at any rate—may not be nearly as good as that which results from the slower stroke. Top-of-the-table players always play to leave the object white *behind* the spot whenever this is possible by means of a cannon which also places the red in position for a pot.

Diagram 947 illustrates a variation of the stroke shown on Diagram 946. Here, a thinner than half-ball stroke is required and although the cannon is quite easy just as a stroke a very correct contact is necessary for the retention of good position. The intersected line on the diagram indicates how the red may be placed in good position for a pot, but should the cue ball take the red at all on the inside or decidedly on the outside top-of-the-table position will be broken up, and in addition to this the resultant position will in all probability be more or less poor.

Diagram 948 illustrates the kind of position which may be set up when the cue ball takes the red about half-ball on the outside. The after-position will generally be poorer still when the cue ball takes the red on the inside, for in this case the red will be cut down the table and the cue ball will travel towards the top cushion. A very slight difference in the degree of the thinness of the cue ball's contact with the object white means a considerably different kind of contact with the red ball and consequently unless this cannon is played with care it may easily lead to loss of position.

As a rule when potting the red into a top pocket to leave position for a top-of-the-table cannon there is only one correct way of playing the stroke, but positions occasionally arise which permit of the after-position to be played for totally different strokes.

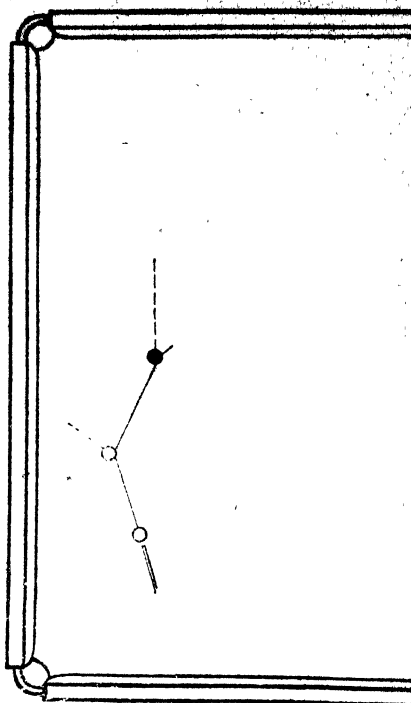


DIAGRAM 947.—A top-of-the-table stroke. A thin ball-to-ball cannon placing the red for a pot. Red ball on the spot. Object white 7 inches from the top cushion and $22\frac{1}{2}$ inches from the side cushion. Cue ball $9\frac{1}{2}$ inches from the top cushion and 13 inches from the side cushion.

Diagram 949 illustrates one of these positions and also the retention of top-of-the-table position by means of a good-strength run-through pot, and Diagram 950 shows how from the identical location of the balls the same correct after-position may be gained by means of a very accurate stab pot. For the generality of good amateurs the stroke off the side cushion, as illustrated on Diagram 949, is the safer of the two, both as regards the stroke itself and the retention of position, but the very high-class players make use

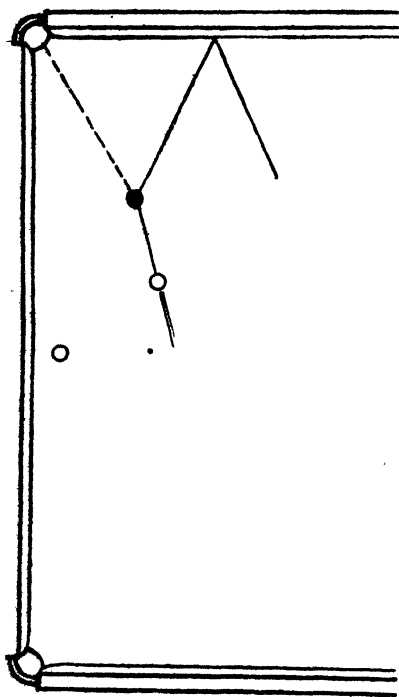


DIAGRAM 949.—A top-of-the-table stroke. Setting position for a cannon by means of a stroke which causes the cue ball to travel to the cushion and rebound a considerable distance from it. An alternative stroke is illustrated on Diagram 950. Red ball $9\frac{1}{2}$ inches from the top cushion and 18 inches from the side cushion. Object white 3 inches from the top cushion and on the central line of the table. Cue ball 12 inches from the top cushion and $27\frac{1}{2}$ inches from the side cushion.

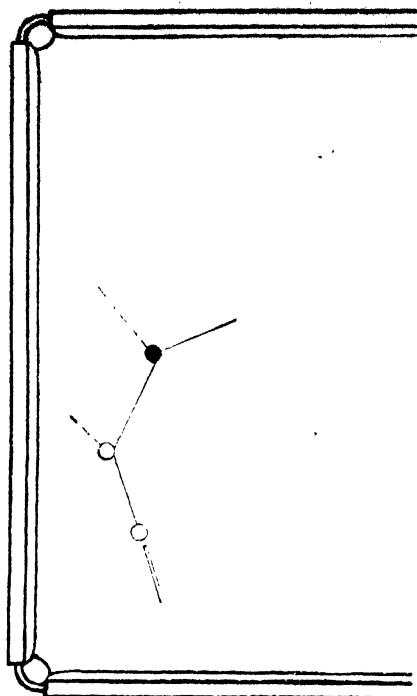


DIAGRAM 948.—An example of the bad position which is set up when in playing to leave position for a pot the cue ball makes a bad contact with the red. Position of the balls as on Diagram 947.

of the stab pot in positions of this nature.

Diagram 951 shows a position which offers a choice between playing the top-of-the-table game or getting position for the in-off game by means of a pot which leaves the cue ball well placed for a cross in-off. So great is the desire of the majority of good amateurs to make breaks at the top of the table that most of them in a position like this are lured away from the simpler and safer in-off game by the enticement which is offered to make a break by means of seductive top-of-the-table play. It is not that a good player goes wrong over the first stroke when refusing the in-off game in the position illustrated on Diagram 951, for provided that the pot is played the

right way it is easy enough to obtain a correct cannon position by its means, but loss of position generally comes a few strokes later—except of course with players of exceptional ability—owing to the extreme accuracy with which most top-of-the-table strokes must be played for the retention of correct position. Many amateurs who continually attempt to play the top-of-the-table game do not, when faced with a position of the nature of the one shown on Diagram 951, even play the pot the correct way. Instead of causing the cue ball to travel across the table well past the spot after its rebound from the side cushion—as illustrated on the diagram—they attempt to place the cue ball in a commanding position on the same side of the table as the pocket into which the

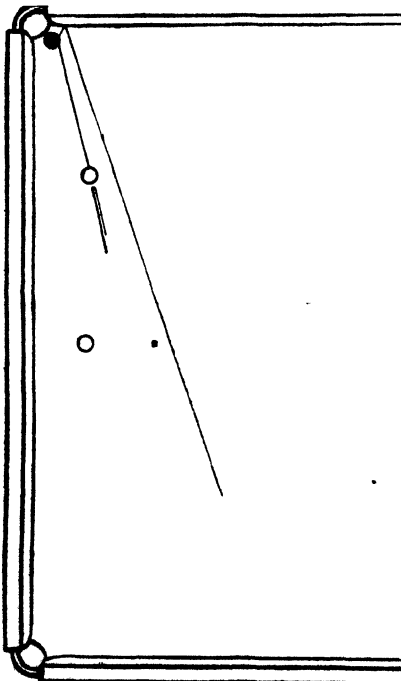


DIAGRAM 951.—A top-of-the-table stroke.

to get position for a cannon. Object
: on the central line of the table and a
few inches from the cushion.

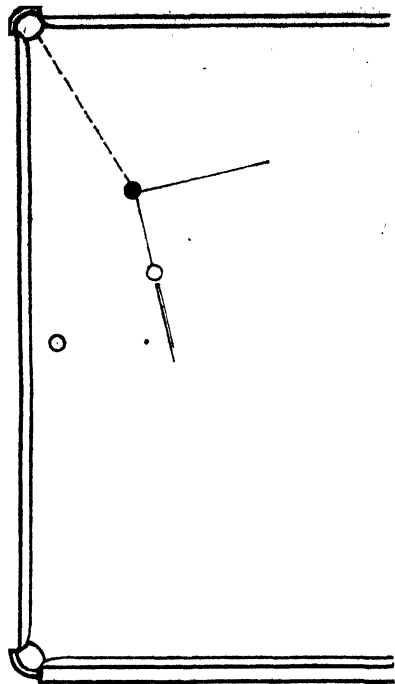


DIAGRAM 950.—A top-of-the-table stroke. Getting position for a cannon by means of a stab pot. Position of the balls (as on Diagram 949).

red is potted. Such a stroke is of course quite possible, but the latitude for error is only small and consequently correct position can only be gained by means of a very perfect stroke. In most top-of-the-table pots in which the side cushion has to be struck by the cue ball this ball has to remain on the same side of the table as the cushion which it strikes, and whenever this is the case there is not much latitude for error as regards the run of the cue ball without loss of position should the object white not be quite close to the spot. In positions at all similar to the one illustrated on Diagram 951 with the red ball so close to the pocket the cue ball need not remain on the same side of the table as the cushion which it strikes in order that it may take up a commanding position for the

stroke. In fact, it should not remain on this side of the table, but should cross the other side, as illustrated on the diagram. The other stroke requires side as well as a nicety of strength, whereas this stroke which causes the cue ball to travel right across the table requires neither side nor any exact strength. Provided that the cue ball travels across the table with anything like the direction indicated on the diagram it has not to run any very exact distance in order to take up correct position for the cannon. The cue ball's line of travel is regulated by the contact which is made with the red and whenever the cue ball passes close to the spot and below it—as shown on the diagram—as it travels across the table its line of travel is a good one. In the stroke illustrated on the diagram, the position resulting from the pot would still have been a very good one had the cue ball travelled a foot or even eighteen inches less than the distance indicated by the continuous line and the same would have been the case had the cue ball travelled a foot or so farther than shown on the diagram. Indeed, perfect position will often result from this stroke when the cue ball travels across the table with sufficient pace to reach the side cushion and rebound some considerable distance from it.

Diagram 952 shows a position which presents a choice between a simple in-off and a pot by means of a very thin cut. The in-off is undoubtedly the game even for the good amateur, but with the object white situated as shown on the diagram perfect top-of-the-table position may be set up by a correctly-played pot. The contact with the red has of course to be a very thin one, consequently a fair amount of pace must be used in order that the ball may travel to the pocket. This pot is not an easy one—especially into a tight pocket—and when it is got the cue ball may run into a bad position owing to the strength of the stroke not having been good. The stroke has not, however, to be played with anything like exact strength in order that correct cannon position may be set up for the next stroke. The continuous line on the diagram indicates the good position which results from a good-strength stroke, but the cue ball could travel a greater or less distance without position being lost. If, however, the cue ball should come to rest anywhere near the central line of the table a bad position will in all probability be set up.

Diagram 953 illustrates a position which as regards the stroke to be played often occurs at the top of the table. Position is retained by means of a gentle cannon, the first object ball



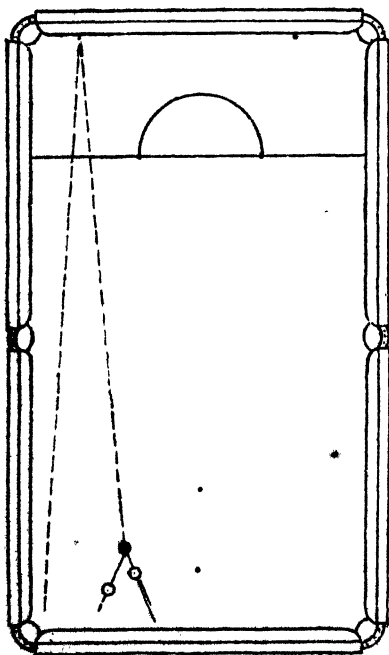
DIAGRAM 952.—A top-of-the-table stroke. A very thin pot. Crossing the table to the other side of the white to get position for a cannon. Red ball $1\frac{1}{2}$ inches from the side cushion and $6\frac{1}{2}$ inches from the top cushion. Object white on the central line of the table and about 6 inches from the cushion. Cue ball on the central line of the table and 17 inches from the top cushion.

being taken quite thinly. When the stroke is correctly played the white ball is barely moved and the red travels only a few inches down the table. The cue ball by reason of the gentle and very full contact which it makes with the red comes to rest almost immediately after reaching this ball, and position is thus left for a screw-back cannon. Of course, the angle for this screw cannon will depend upon how the cue ball takes the red, but when the thin gentle cannon illustrated on Diagram 953 is correctly played the resultant position will be very much like the one shown on Diagram 954, and then by means of a good-strength screw-back cannon, as illustrated on this diagram, the red ball may be brought to the top of the table again.

Diagram 955 illustrates another position which as regards the stroke to be played is of common occurrence at the top of the table. The cannon to be played here is what is known as a squeeze stroke, that is to say, the cue ball must, as it were, squeeze its way between the object balls in order to get to the

other side of them. In the position illustrated on the diagram the object balls are intended to be just a ball's diameter apart, and therefore in order that the cue ball may move them as little as possible the stroke must be played quite gently and the contact with the red must be a very thin one. When the cue ball takes the red very thinly and quite gently it not only hardly moves it, but by reason of its getting to the other side of it position is set up for an easy pot. The continuous line on the diagram which marks the path over which the centre of the cue ball travels indicates about the distance which this ball should run when the stroke is played with accuracy. In this stroke the object white is moved considerably more than the red, for in the position shown on the diagram with the object balls so close together the second ball must always be taken less thin than the first when the cue ball's contact with the first is an extremely thin one.

Diagram 956 shows this stroke on a larger scale, the intersected circles



954. — A screw-back cannon bringing the red ball to the top of the table

indicating the cue ball's contact with each object ball.

Diagram 957 further illustrates this squeeze stroke. Here, the red is the second object ball and consequently it is moved considerably more than in the stroke shown on Diagram 955, wherein it is the first object ball. A simple pot is left for the next stroke when the object white is taken quite thinly and when in addition to this the cannon is played quite gently.

In the positions shown on Diagrams 955 and 957 the object balls are only a ball's diameter apart, but the same kind of stroke can be played even though the balls are a good deal farther from each other, provided that the angle for the cannon is such that a very thin contact with the first ball will allow of

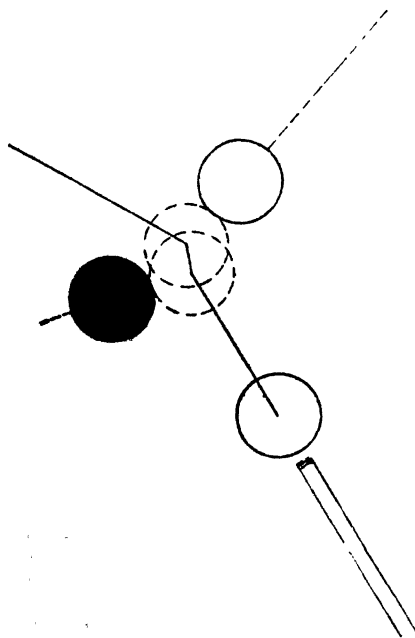


DIAGRAM 956.—The stroke shown on Diagram 955 illustrated on a larger scale. The line indicates the path over the top of the cue ball travels and the dashed circles show the cue ball's contact with each of the object balls.

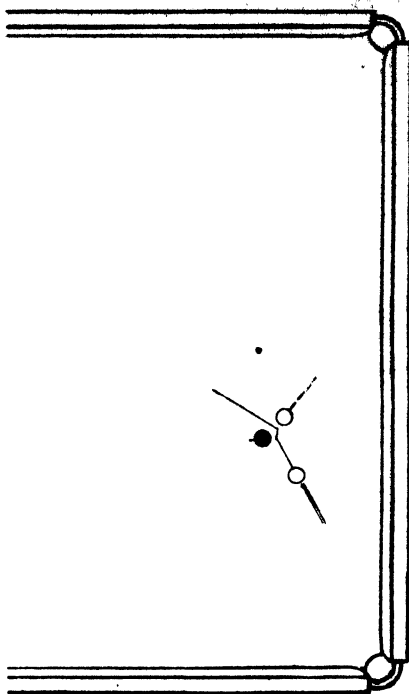


DIAGRAM 955.—A gentle squeeze stroke to leave position for a pot. Red ball 11½ inches from the top cushion and 25 inches from the side cushion. Object white 8½ inches from the top cushion and 28 inches from the side cushion. Cue ball 7½ inches from the top cushion and 19 inches from the side cushion. The continuous line indicates the path over which the centre of the cue ball travels.

the cue ball cannoning somewhat thinly on to the second object ball.

Diagram 958 illustrates such a stroke. If the position is set up according to the measurements given under the diagram it will be found that a cannon can be made by means of quite a thin contact with the red and that when the cue ball also takes the object white thinly it will travel down the table as indicated by the continuous line on the diagram. As the thin contact with the red moves this ball but little when the stroke is played quite gently, a well-played stroke leaves good position for a pot. With the object balls as far apart as in the position

shown on Diagram 958 this cannon can hardly be termed a squeeze stroke, nevertheless it is of the same nature as these strokes, both as regards the correct way of playing it and the after-position which should result from it.

The top-of-the-table player always endeavours to keep the object white either right behind the spot or at least in its immediate vicinity, but no matter how capable he may be correct position for this ball is sooner or later lost. When this happens the player at once plays, to bring the ball back to the neighbourhood of the spot, provided, of course, that the position of the balls permits of this being done by means of

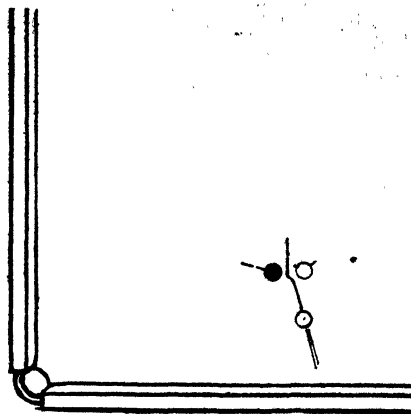


DIAGRAM 957.—A gentle squeeze stroke to leave position for a pot. Object balls about a ball's diameter apart.

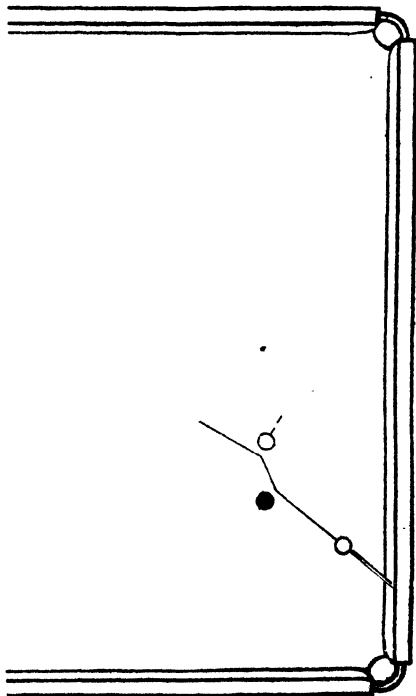


DIAGRAM 958.—A top-of-the-table stroke. A gentle thin cannon to leave position for a pot. Red ball 12 inches from the top cushion and 18 inches from the side cushion. Object white 12 inches from the top cushion and 25 inches from the side cushion. Cue ball 5 inches from the top cushion and 14 inches from the side cushion.

a stroke which is not too difficult for him to attempt.

Diagram 959 illustrates a position for an ordinary run-through cannon. The object white is here some distance from the spot, and a gentle run-through stroke will place it still farther away from it. By means, however, of a good-strength stroke the object white may be made to travel to the cushion and back to the vicinity of the spot, as indicated by the intersected line on the diagram. The stroke, however, requires well-handling, for in order for it to be perfectly played not only must the white ball be placed close to the spot but the cue ball must make a good contact with the red in order that position may be left for an easy pot, for it is of little use placing the white near the spot unless the cannon can be followed by an ordinary pot.

Diagram 960 is illustrative of a commonly-occurring position. With the balls to the measurements given under the diagram very good position may be left by means of a gentle thin cannon, for a good contact with the red will leave position for a pot by means of which position may be obtained for the cross in-off which leads to centre-pocket play. In playing this

care, however, must be taken that the cannon does not result in a five-shot, otherwise the resultant position will be a bad one. In order to make a good contact with the red the object white has to be taken very thinly, and this thin contact with the first ball takes so little pace out of the cue ball that the red may easily drop into the pocket as the result of what has seemingly been quite a gentle stroke. Even when this stroke is perfectly played as regards the resultant positions of the red ball and the cue ball the object white must

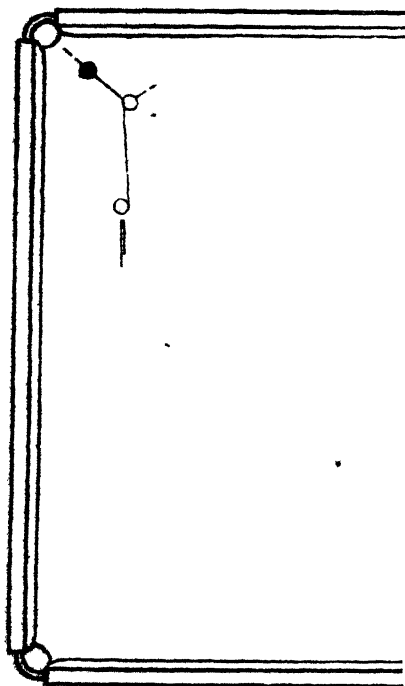


DIAGRAM 960.—A gentle thin cannon to leave the red quite close to the pocket in order that by the next stroke position may be obtained for a cross in-off. A higher-class stroke is illustrated on Diagram 961. Red ball $4\frac{1}{2}$ inches from the top cushion and 5 inches from the side cushion. Object white $9\frac{1}{2}$ inches from the top cushion and 10 inches from the side cushion. Cue ball $9\frac{1}{2}$ inches from the top cushion and $20\frac{1}{2}$ inches from the side cushion.

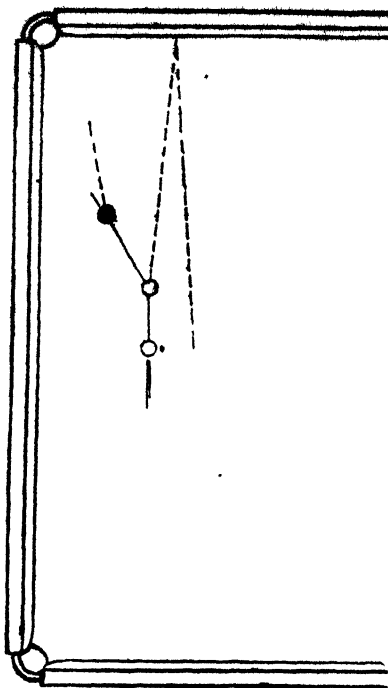


DIAGRAM 959.—A top-of-the table stroke. A run-through cannon placing the object white near the spot and the red in position for a pot. Red ball 6 inches from the top cushion and 27 inches from the side cushion. Object white 10 inches from the top cushion and 27 inches from the side cushion. Cue ball 10 inches from the top cushion and on the central line of the table.

remain badly placed. It often happens that a position is of such a nature that it is an extremely difficult matter to control the running of *both* object balls and that the placing of even one of the balls in position for a further score demands a very well-played stroke. When this is the case even a very good player does not try to do too much, but simply plays to leave one of the balls well placed for the next stroke, knowing that if the other ball takes up a bad location it will always be possible to bring it into play again later on. When, however, a cannon to leave *both* object balls well placed is not

much more difficult than one which—for the time being at any rate—puts one of the balls out of play the good player always attempts to place both the object balls in good position.

Instead, therefore, of playing a thin gentle cannon with the balls in the position shown on Diagram 960 the capable player plays the run-through stroke illustrated on Diagram 961. The fullish contact which is necessary in order that the cue ball may make a good contact with the red and thus leave position for a pot gives the object white a line of travel more or less as indicated by the intersected line on the diagram, and as the result of a good strength stroke the ball may be placed somewhere near the spot. The top-of-the-table player when playing a stroke of this nature not only plays to make the object white travel the required distance, but also to give it a good line of travel. When the cannon is played in this manner, should the strength of the stroke not be very good, with the

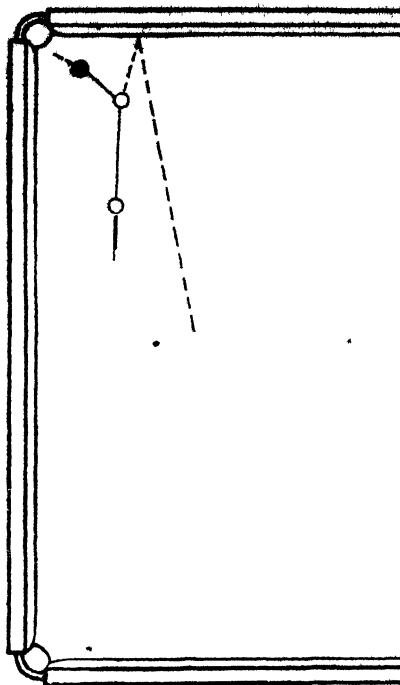


DIAGRAM 961.—A top-of-the-table stroke. A run-through cannon sending the object white to the vicinity of the spot and placing the red close to the pocket. Position of the balls exactly as on Diagram 960.

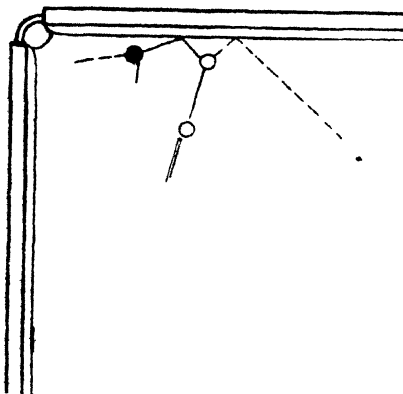


DIAGRAM 962.—A top-of-the-table stroke. A running-side cannon sending the object white to the vicinity of the spot and placing the red in position for a pot. Red ball $1\frac{1}{2}$ inches from the top cushion and $11\frac{1}{2}$ inches from the nearest point on the side cushion. Object white $2\frac{1}{2}$ inches from the top cushion and $18\frac{1}{2}$ inches from the side cushion. Cue ball 11 inches from the top cushion and $15\frac{1}{2}$ inches from the side cushion.

result that the object white after striking the side cushion only travels about half-way to the spot, the after-position as regards the object white will be much better than that which results from the gentle thin stroke illustrated on Diagram 960, inasmuch as in the former case this ball will be in position for an in-off from the D, whereas in the latter case no such stroke will be on.

Diagram 962 illustrates a top-of-the-table position with the object white quite a long way from the spot. The cannon is quite an easy one and by means of a good-strength stroke the object white can be placed close to the spot and above it. A good contact with the red places this ball in position for a pot, and thus with the object white above the spot perfect position

for a continuance of top-of-the table play can be obtained by means of the pot which follows the correctly-played cannon.

Diagram 963 illustrates another position with the object white far removed from the spot, and also illustrates how by means of a well-played cannon the object white may be placed just above the spot and the red close to the pocket. This positional stroke is, however, a difficult one, for although the cannon just as a stroke is quite simple it has to be played with screw, and with the cue ball so far from the object white it is no easy matter to play it with the exact strength which is necessary to place the white close to the spot in the manner indicated by the intersected line on the diagram. Moreover, not only does a perfectly-played stroke demand that the object white be placed close to the spot, but also that a very correct contact be made with the red in order that this ball may be placed in position for a pot. Should the cue ball cannon full or nearly full on to the red instead of taking it well on the outside, as illustrated on the diagram, position for a pot will not be left, for a fullish contact with the red must cause this ball to rebound a considerable distance from the cushion, and thus as the result of such a contact position—at least as regards top-of-the-table play—is at once lost.

Diagram 964 illustrates another difficult top-of-the-table positional stroke which is sometimes played by first-class players. The cannon by itself is not a difficult one for any good player and a gentle stroke will generally leave good position, for by its means the red will be placed somewhere near the pocket. A gentle stroke, however, almost necessarily means the end of top-of-the-table play owing to the object white's distance from the spot. By using a fastish stroke, however, it is possible to drive the white to the vicinity of the spot more or less in the manner indicated by the intersected line on the diagram. The difficulty of the stroke lies in the very accurate contact which the cue ball must make with the object white in order to give it a good line of travel, especially as in addition to this the strength of the stroke must be so gauged that the ball neither stops considerably short of nor travels considerably beyond the spot. Again, although the stroke has to be played with a fair amount of strength in order that the white ball may be made to travel to the spot, the red must travel with very little speed else it will not come to rest close to the pocket. By taking the red very thinly indeed very

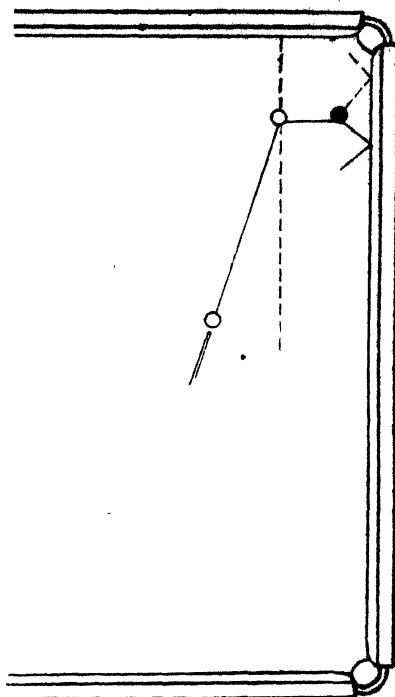


DIAGRAM 963.—A top-of-the-table stroke. A screw cannon sending the object white to the vicinity of the spot and placing the red in position for a pot. A difficult stroke. Red ball $2\frac{1}{2}$ inches from the top cushion and $10\frac{1}{2}$ inches from the side cushion. Object white 8 inches from the top cushion and $10\frac{1}{2}$ inches from the side cushion. Cue ball $14\frac{1}{2}$ inches from the top cushion and 31 inches from the side cushion.

little of the cue ball's pace is communicated to it, and in this way the fast stroke only cuts it up to the pocket. An appreciably thicker contact than the correct one not only imparts too much pace to the red but also causes it to strike the side cushion too soon, and the double effect of such a contact causes the ball to travel to a point on the top cushion which is some distance from the pocket. With the balls to the measurements given under the diagram this positional stroke to place the red close to the pocket and the object white near the spot must be played with check side, but owing to the red ball having to be

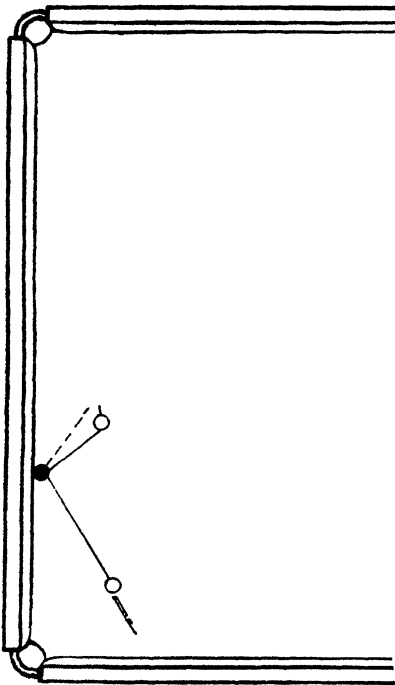


DIAGRAM 965.—A kiss cannon played with left side. A good stroke bunches the balls. An alternative stroke is illustrated on Diagram 966. Red ball touching the top cushion and $20\frac{1}{2}$ inches from the nearest point on the side cushion. Object white $5\frac{1}{2}$ inches from the top cushion and $26\frac{1}{2}$ inches from the side cushion. Cue ball 7 inches from the side cushion and $7\frac{1}{2}$ inches from the top cushion.

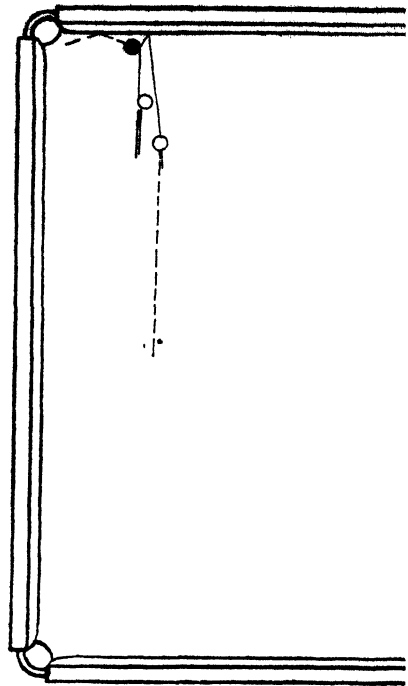


DIAGRAM 964.—A top-of-the-table stroke. A thin cannon off the cushion driving the object white to the vicinity of the spot and placing the red close to the pocket. A very difficult stroke. Red ball 1 inch from the side cushion and 9 inches from the nearest point on the top cushion. Object white $12\frac{1}{2}$ inches from the top cushion and 14 inches from the side cushion. Cue ball 9 inches from the side cushion and $10\frac{1}{2}$ inches from the top cushion.

taken very thinly only a moderate amount of side must be used, otherwise instead of the object white being taken very fully it will be taken on the inside or even missed altogether.

Just as a pot at the top of the table may often be played in two entirely different ways for the retention of perfect top-of-the-table position so too may a cannon at the top of the table often be played in two or even more totally different ways, either or any of which will, when the stroke is correctly played, give further good top-of-the-table position.

Diagrams 965 and 966 illustrate a placing of the balls—exactly the same in both cases—which is typical of positions which often occur, and also the retention of top-of-the-table position by entirely different strokes. The stroke on Diagram 965 is a kiss cannon played with left side, and a well-played stroke bunches the balls very much in the manner shown on the diagram.

Diagram 966 shows how by means of a running-side cannon the red ball may be sent to the pocket and the white placed above the spot. This stroke has to be played very much after the manner of a cushion pot in order that the red may travel to the pocket on a line which is nearly parallel to the top cushion. A good contact with the object white is of course necessary in order that this ball may travel on or near the line indicated on the diagram, but unless it is taken quite thinly it will always travel towards the spot. The strength of the stroke which is necessary to send the red to the pocket in the manner illustrated on the diagram is also the correct

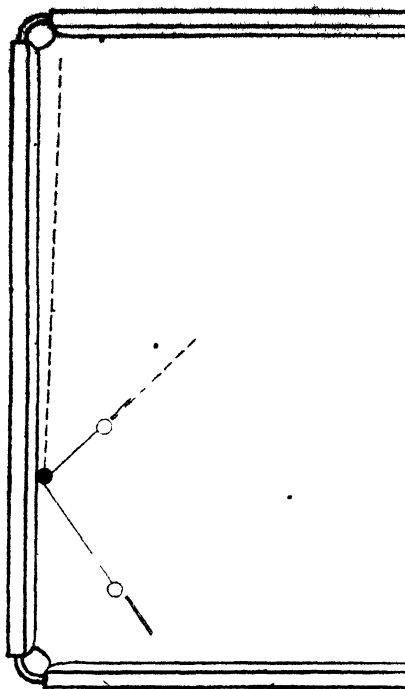


DIAGRAM 966.—A top-of-the-table stroke. A running side cannon off the top cushion sending the red to the vicinity of the pocket and the object white to the vicinity of the spot. Position of the balls exactly as on Diagram 965.

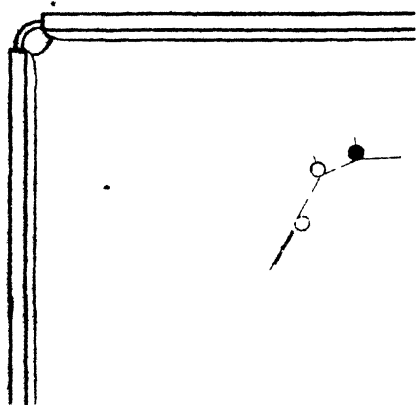


DIAGRAM 967.—A top-of-the-table stroke. A gentle thin cannon to leave position for a run-through cannon. Alternative top-of-the-table strokes are illustrated on Diagrams 968 and 969. Red ball on the spot. Object white 14 inches from the top cushion and 29 inches from the side cushion. Cue ball 19½ inches from the top cushion and 26½ inches from the side cushion.

strength to place the white near the spot.

Diagram 967 shows a top-of-the-table position which admits of a cannon being played in no less than three different ways, any of which when the stroke is correctly played giving further good top-of-the-table position. The first of these cannons, a thin ball-to-ball stroke, is illustrated on the diagram. A well-played stroke leaves position for a run-through cannon by means of which the red ball may be placed close to the pocket. This thin cannon will also often give position for an easy pot. With the balls to the measurements given under the diagram the stroke must be played very gently, for should the object white travel more than a very

short distance the stroke will probably result in a cover, and with the balls a considerable distance from the top cushion the position will be a very bad one.

Diagram 968 shows the balls in exactly the same position as on Diagram 967 and illustrates the second way of playing the cannon. By means of a good-strength stroke the balls may be bunched, but here again unless the stroke is very well handled a bad cover may be set up. On the diagram, as the result of an actual stroke at the table, a cover has been avoided by reason of the very full contact which has been made with the object white. When, however, the white is taken just a shade less full than as indicated on the diagram it will often gently kiss the red, after its rebound from the top cushion, and come to rest right behind it.

Diagram 969 shows the balls in exactly the same position as on the two previous diagrams, and illustrates the third way of playing the stroke. This cannon is a most beautiful one and is often played by Stevenson and Reece. The stroke is a gentle run-through played in such a way that the cue ball catches the red quite thinly on the outside. A perfect stroke leaves the object white well above the spot, as indicated by the intersected line on the diagram, and hardly moves the red by reason of the gentle thin contact which the cue ball makes with it. The thin contact with the red also allows of the cue ball to get

to the other side of it, as indicated by the continuous line on the diagram, and in this way ideal top-of-the-table position is set up. The perfect stroke illustrated on Diagram 969 is, however, not an easy one owing to the thin contact which the cue ball has to make with the red. When the three balls are fairly close together and a cannon is quite a simple shot by means of a somewhat thin stroke, it is generally an easy enough matter to take the second object ball quite thinly on the outside when a thinner than half-ball stroke is used, but it is a very different thing getting this accuracy of contact with the second ball when in the same position the cannon is played as a run-through. In the stroke under discussion there is very little latitude indeed for error. The cue ball must take the red quite thinly, otherwise the position

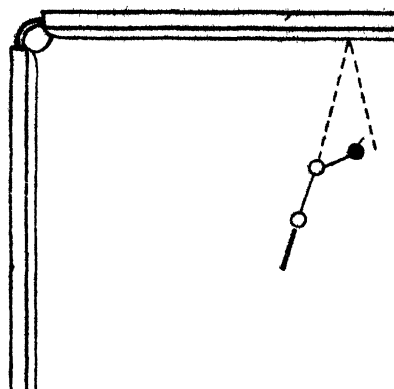


DIAGRAM 968.—A top-of-the-table stroke. A run-through cannon bunching the balls. An alternative stroke to the one illustrated on Diagram 967. Another alternative stroke is illustrated on Diagram 969. Position of the balls exactly the same as Diagram 967.

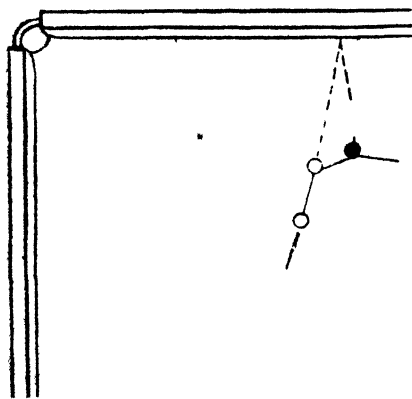


DIAGRAM 969.—A beautiful top-of-the-table stroke. A gentle run-through cannon getting quite thinly on to the outside of the red. A well-played stroke leaves ideal top-of-the-table position. Position of the balls exactly the same as on Diagram 967.

played for cannot be obtained. In playing to cannon on to the edge of the red it is very easy to miss the ball altogether. When a cannon of this nature is missed in this manner by a good player many spectators think that he has played a very poor stroke, little knowing that he played to almost miss the second ball. On the other hand when in this stroke the cue ball takes the red just a little fuller than the player intended, a bad cover will generally be set up, for by reason of the stroke having been played quite gently in order that the object white may be left a considerable distance behind the spot the cue ball will not get clear of the red, and thus the red will be between the two balls with the cue ball quite close to it. In the position illustrated on the diagram the red is on the

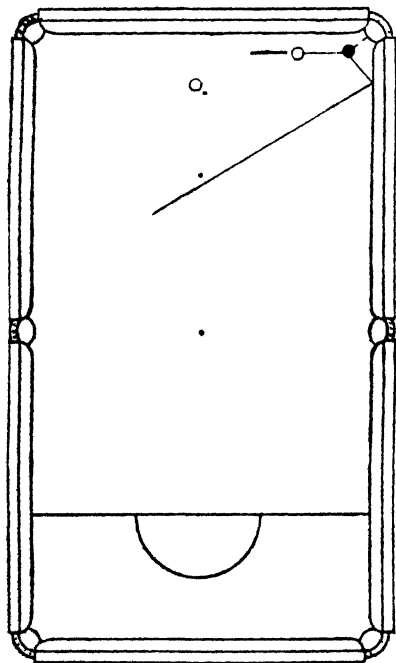


DIAGRAM 971.—A pot to leave position for a cannon irrespective of whether the red can go on the billiard spot or not. Object white to the left of the spot and above it but so close to it that there is only just room for the red to be placed there after the pot. Red ball and cue ball as on Diagram 970.

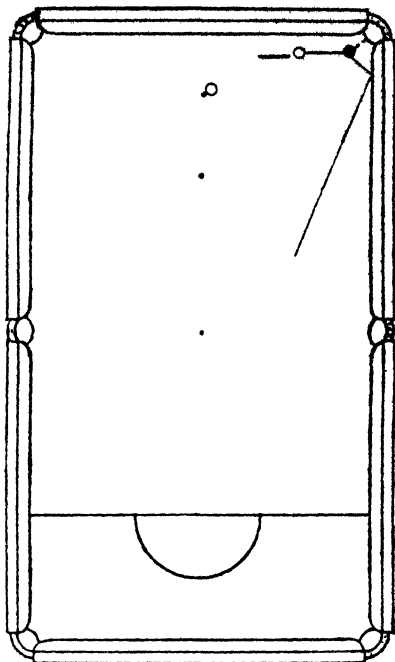


DIAGRAM 970.—A pot to leave position for a cannon off the red on the pyramid spot. Red ball $2\frac{1}{2}$ inches from the top cushion and $4\frac{1}{2}$ inches from the side cushion. Object white to the right of the billiard spot and overhanging it.

spot, but positions which allow of the same stroke being played often occur with the red a considerable distance from it.

Diagram 970 shows a position which is typical of positions which frequently occur at the top of the table. The red presents an easy pot, but it cannot afterwards be placed on the billiard spot—the position of the object white will not allow of this—and consequently must go on the pyramid spot. In positions of this nature good players therefore play to get well below the pyramid spot in order to leave position for an easy cannon off the red. This stroke is shown on the diagram, and when correctly played the balls can be placed in position for top-of-the-table play by the cannon which follows the pot.

TOP-OF-THE-TABLE PLAY.

When the object white is almost on the billiard spot it is quite obvious that the red cannot go on this spot, but it frequently happens that the position of the object white is such that it is questionable whether or not the red can be spotted after the pot, and when the good player cannot be certain on which spot the red must afterwards go he takes care to leave an easy positional cannon for the next stroke, no matter on which spot the red may have to be placed. In order to retain position when it is doubtful whether the red must go on the billiard spot or the pyramid spot after the pot the cue ball must sometimes remain on the same side of the table as the cushion which it strikes, and at other times it must cross over to the other side of the table.

Diagram 971 illustrates a position in which the pot should be made by a stroke which causes the cue ball to cross the table. The location of the object white is intended to be such that room is just left for the red to go on the spot, but only just. If the player, looking carefully at the position of the white before playing the pot, came to the conclusion that the red could not spot, and then played a stroke similar to the one illustrated on Diagram 970 in order to have good position for a cannon off the red on the pyramid spot, the resultant position would be a very bad one when the red was placed on the billiard spot, for the three balls would then be nearly in a straight line, with the red ball right in front of the object white and almost touching it. By crossing the table in the manner indicated on the diagram the player will have good position for the next stroke no matter on which spot the red has to be placed.

CHAPTER XLIII.

PIQUE AND MASSE STROKES.

Two things are essential for big breaks at Billiards, viz., knowledge and execution, and generally speaking the player who improves at the game does so because of the advance which he makes in both of these qualifications. Before a player can become really good he must possess a pretty thorough knowledge of the game and sufficient execution to put what he knows into practice. Knowledge without good execution is nearly as bad as good execution with very little knowledge. In fact, as far as the winning of games is concerned, it is often very much worse, for how often do we see an amateur who possesses a very good knowledge of the game but whose executionary powers are weak get beaten by another who is little more than a good stroke-player? The good stroke-player seldom misses any ordinary shot and often enough gets out of difficult positions by some really brilliant shot. He may not make any big break, but he is always making useful little breaks, whereas the player who has a good knowledge of the game but is weak at stroke play is constantly breaking down at more or less easy strokes. Knowledge of the game comes to a player either from intelligently watching the play of better players or from a careful study of the subject in a book or paper, and even then practice at the table is necessary in order to put into effect what he has seen or read of. Execution, on the other hand—especially when this necessitates good cue-power—can never be acquired from reading and can only come from constant practice. Of no strokes is this more true than of piqués and massés. Indeed, it is not too much to say that practice by itself is hardly sufficient for a mastery of these strokes for so much depends upon the position of the player at the table, the elevation of the cue, and correct hitting of the cue ball—that is as regards the part of the ball which must be struck—when playing one of these strokes, that unless a player receives some coaching his progress even with a considerable amount of practice will necessarily be very slow.

The ordinary player, that is the player who now and then gets a twenty break and who on rare occasions—generally by the assistance of a fluke or two or by a favourable run of the balls long continued—manages to get into the thirties will find piqué and massé strokes—especially the latter—quite beyond him, but the player who makes forties and fifties frequently and occasionally much bigger breaks will with practice, coupled with the guidance of a capable instructor, as a rule, soon attain a fair amount of proficiency at these strokes. To-day many of our leading amateurs play piqué and massé strokes extremely well, but on the other hand it is no uncommon thing to find players to whom a three-figure break is no great rarity who have little or no idea of the correct way of playing these strokes, and who fail lamentably on the rare occasions when they attempt them. These players would undoubtedly make good progress with proper tuition and practice, but the only practice they get is when the position to be set up on the table during the course of a game, and in the case of a position they often attempt some almost impossible stroke in

Piqué strokes are often confounded with massés, but there is a big difference between the two, for whereas in a piqué stroke the cue ball after contact with the object ball always travels back towards the striker, in a massé stroke it must travel forward and away from the striker after hitting the object ball. Also, in a piqué stroke the cue ball may travel in a straight line both to and from the object ball, whereas in a massé with the cue ball not quite close to the object ball the line of travel previous to contact must be a more or less pronounced curve, and except when the cue ball makes a very full contact with the object ball the line of travel to a second object ball lying some little distance from the first must also be curved in order that the stroke may come off. Another distinguishing feature between piqué and massé strokes is that although the former often require no side, true massés cannot be made without hitting the cue ball on one side.

A piqué stroke in its simplest form is really nothing more than a straight screw-back, although the cue ball is hit near the top instead of low down. For the sake of convenience some of the diagrams from the chapter on SCREW AND REVERSE ROTATION are herein reproduced.*

Diagram 972 illustrates the action of the cue in an ordinary screw stroke when the same is played with a horizontally-held cue. Diagram 973 is illustrative of the manner in which the cue ball must be struck when it lies near the cushion. In this diagram, although the alignment of the cue is to a point on the ball which is a little above the spot which is the centre of the ball for all strokes played with the cue held in the ordinary way, the point of contact is really well below the centre for this particular stroke, for in all strokes played with an uplifted cue the imaginary line which divides the ball in two must be parallel with the cue just in the same way as it is when the cue is not uplifted at all. In Diagram 973 the line AB which passes through the centre of the ball and thus divides it in two is parallel with the cue, and therefore the outside centre of the ball in this stroke is at A. Consequently in this stroke just as in other screws the cue ball is struck at a point well below its centre.

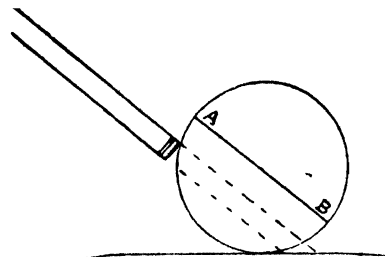


DIAGRAM 973.—Screwing with the cue at an angle of about 45° . Here the line AB which is parallel to the cue passes through the centre of the ball and consequently the cue strikes the ball well below the centre.

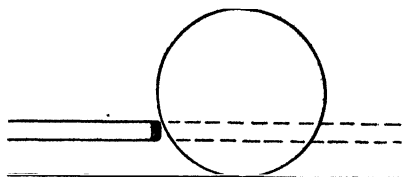


DIAGRAM 972.—Screwing with a horizontally-held cue.

Diagram 974 illustrates the same thing with the cue uplifted for a piqué stroke, for here again the line AB, which is parallel with the cue, divides the ball in two, and consequently the outside centre of the ball is at A; and Diagram 975 illustrates the extreme case when with a vertically-held cue the outside centre of the ball is right at its top.

The amount of reverse rotation which can be imparted to the cue ball depends upon the elevation of the cue. In ordinary screw shots the cue ball

* See Diagrams 177, 179, and 180.

never come back to the striker without its meeting an obstacle, for the more reverse rotation the player wishes to impart to the ball the harder must he hit it, and thus the first result of a strong screw shot is rapid translation of the cue ball. In piqué strokes the case is different. The downward blow from the uplifted cue causes the ball to be pinched between the cue and the bed of the table, and thus it is as it were squeezed out, consequently the amount and speed of its translation is not at all commensurate with the strength of the blow. Indeed, when the cue is held almost vertically and a light but sharp crisp stroke is used the ball may be made to come back smartly without having touched an object ball. In such a case the cue ball only travels forward about an inch or two before returning to the striker.*

In order to cause the ball to return to the striker—without its having come into contact with an object ball—the cue must be held very nearly vertically, otherwise the ball will be sent forward with some speed and cannot return. The correct point of contact is about half-way from the top of the ball—which in this stroke is its centre—as shown on Diagram 975. If instead of the cue striking the ball as shown on the diagram it meets it appreciably nearer the top the stroke will fail, for the vertically-held cue coming down well on to the top of the ball will pinch the ball between it and the bed of the table in such a manner that it will not even be squeezed out. If on the other hand the cue strikes the ball appreciably farther from the top than as indicated a miscue is inevitable, for the cue is bound to glance off the ball.

Even when the ball is struck at the correct spot a miscue may easily occur unless the cue is well chalked. A clean, crisp stroke should be used, and exactly as in ordinary screws the fingers should grip the cue tightly just at the moment it meets the ball. In order that the ball may travel forward and also return in a straight line it must be struck at the centre—the centre in this case meaning neither to the right nor to the left. When the contact, correct in other respects, is away from the centre—even slightly away—the ball will always describe a curve.

Piqué strokes may be broadly divided into two classes, viz., those in which the cue ball has to come back in a straight

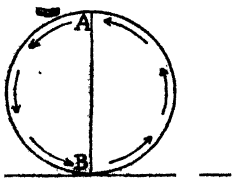


Diagram 975.—A piqué stroke with a vertically-held cue. The line AB which is parallel to the cue passes through the centre of the ball and consequently the point of

contact. The arrows of the rotation which the stroke imparts to the ball.

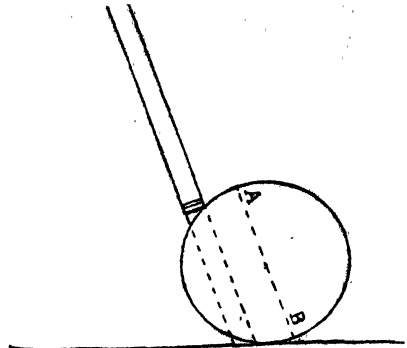


Diagram 974.—A piqué stroke. The line AB which is parallel to the cue passes through the centre of the ball and consequently the stroke imparts reverse rotation to the ball by reason of its being hit below the centre.

the stroke demands that the cue ball shall travel back in a curve after its

* Some players with exceptional cue power can by this piqué stroke make a ball come back after travelling forward 6 inches or more, but the principle of the stroke is exactly the same.

with the object ball. The piqués in which the cue ball has to recoil in a straight line from the object ball are naturally the easier of the two kinds of strokes, for in all straight-back piqués the object ball has to be taken quite full and the cue ball has to be struck without side, whereas in piqués in which the making of the stroke demands that the cue ball shall describe a curve the object ball must be taken less than full in addition to the cue ball being hit on the side though still high up. There is, however, a great difference in the way in which even straight-back piqués have to be played as regards the angle of the cue's elevation, and broadly speaking, the nearer the cue ball is to the object ball the more must the butt of the cue be raised, until when the cue ball is almost touching the object ball the cue must be held vertically or almost so.



DIAGRAM 976.—The cue ball is in a straight line with the object ball. Cue ball about one-sixteenth of an inch from the white. Red ball 10 inches from the cue ball.

Diagram 976 illustrates a position for a piqué cannon with the cue ball about one-sixteenth of an inch from the object white. Here, the cue must be held almost vertically and the downward blow must be sharp and crisp. Should the elevation of the cue not be almost vertical when playing this stroke the cue ball will be pushed through the object ball and the stroke will fail. It has already been explained that translation of a ball which is greatest when the ball is struck by a horizontally-held cue becomes less and less with every increase in the elevation of the butt of the cue until with a vertically-held cue it practically ceases. In the position shown on Diagram 976 as the cue ball is almost touching the white, forward translation of the ball has to be avoided, and consequently the cue must be held very nearly vertically. When by reason of the butt not having been sufficiently elevated, the cue ball is pushed through the object ball, translation

has been too great. When the cue ball and an object ball are close together and in a line with an open pocket—the cue ball lying between the object ball and the pocket—and are at no great distance from it a piqué in-off is exactly the same kind of stroke as the cannon illustrated on Diagram 976. Of course, the farther the balls are from the pocket the more difficult the stroke becomes.

Diagram 977 illustrates the position for the least difficult of piqué in-offs and also the way of playing the stroke. The cue ball is close to the brink of the top pocket and the object ball is an inch or slightly less from the cue ball. A good player could get the in-off by means of a screw played with a nearly horizontally-held cue, but the stroke would have to be very well played to keep the object ball out of baulk. Played as a screw a fair amount of pace must be used in order to cause the cue ball to recoil to

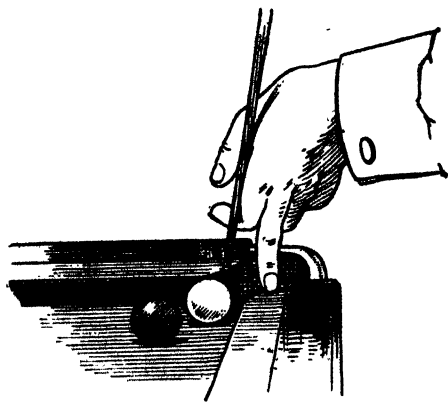


DIAGRAM 977.—A piqué in-off into the left top pocket. Cue ball close to the brink of the pocket and an inch or slightly less from the object ball.

the pocket, and thus the screw is bound to cause the object ball to travel with considerable speed. To play the stroke with sufficient pace to cause the object ball to travel through baulk and out again—especially when the position of the balls is such that the object ball must strike the side cushion at a point considerably above the baulk line—would make such an in-off an extremely difficult if not an impossible stroke even on a fast table. By playing the in-off by means of a piqué stroke the object ball can be easily kept out of baulk, in fact, a well-played stroke will not cause the object ball to travel more than half a yard or so.* A sharp, crisp little stroke played with the cue held at an angle of about 70° to 80° with the table will impart plenty of reverse rotation to the cue ball without sending it forward with much speed, consequently its contact with the object ball will be so gentle that this ball can only be moved forward a short distance. Indeed, if the stroke be played with a vertically-held cue the ball may come back without hitting the object ball at all, especially should the distance between the balls be just slightly greater than as shown on the diagram. In playing piqué strokes therefore it should always be remembered that the more vertically the cue is held the greater the amount of reverse rotation which it is possible to impart to the cue ball, but the less the distance which the cue ball will travel forward—and consequently the less the pace that will be given to the object ball should the cue ball reach it—and conversely, the less vertically the cue is held in these strokes the less the amount of reverse rotation which it is possible to impart to the cue ball, but the greater the distance which the cue ball will travel forward, and consequently the greater the pace that will be given to the object ball. As in the position

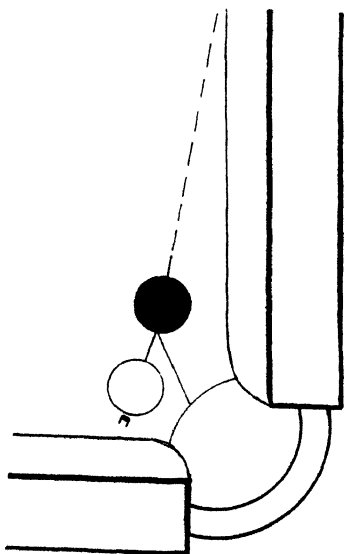


DIAGRAM 978.—A piqué in-off into the left top pocket. Cue ball one inch from the red ball and one inch from the top cushion.

illustrated on Diagram 977 the in-off can be made, in the one case by a stroke played with a nearly horizontally-held cue—playing over the pocket necessitates a slight uplifting of the cue—and in the other by a stroke played with a nearly vertically-held cue, it follows that it is possible to get this in-off with the cue held at any elevation between these extremes, and this being the case it also follows that there is no sharp line of demarcation between an ordinary screw-back stroke and a piqué stroke, and that these two strokes which are both reverse-rotation strokes insensibly merge one into the other. As a matter of fact, players who are just commencing to practise piqué strokes will find that the easiest way to get the in-off in the position shown on Diagram 977 is by holding the cue at an angle of 45° to 50° and striking the cue ball a sharp, crisp blow at a point just slightly above the spot which is ordinarily its centre. With this cue elevation the

* When the cue is held nearly vertically it is possible to get the in-off without moving the object ball more than a few inches, and in extreme cases it may move it less than an inch. When the object ball is moved very little it is because the forward translation of the cue ball is practically exhausted just at the moment of contact with the object ball.

object ball is bound to travel with considerable speed, and when the stroke is played into a top pocket the object ball will most likely go into baulk and remain there. The stroke is, however, quite useful when the in-off is into a baulk pocket. Good players when playing this particular piqué shot into a baulk pocket always play to send the object ball out of baulk, and when it has to travel a considerable distance through baulk before it can cross the line the elevation of the cue is always such as will permit of sufficient pace being imparted to the object ball as to cause it to travel the necessary distance. In playing this piqué in-off great care must be taken not to strike the cue ball even slightly to one side is fatal in straight-back piqués.

Diagram 978 shows a variation of the piqué in-off position illustrated on

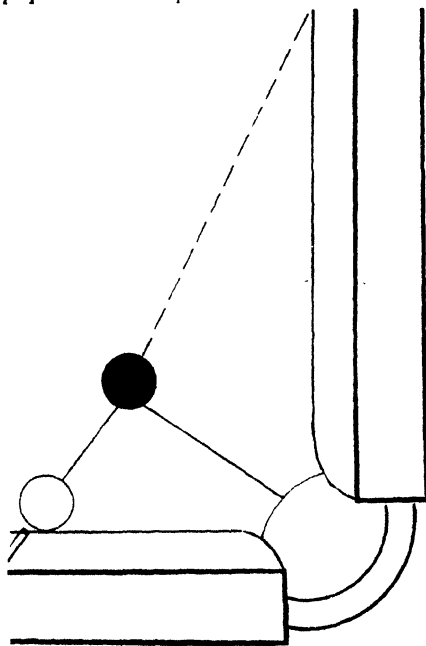


DIAGRAM 980.—An in-off which is half-way between a screw and a piqué. Red ball 5 inches from the top cushion and 6 inches from the side cushion. Cue ball touching the top cushion and $10\frac{1}{2}$ inches from the nearest point on the side cushion.

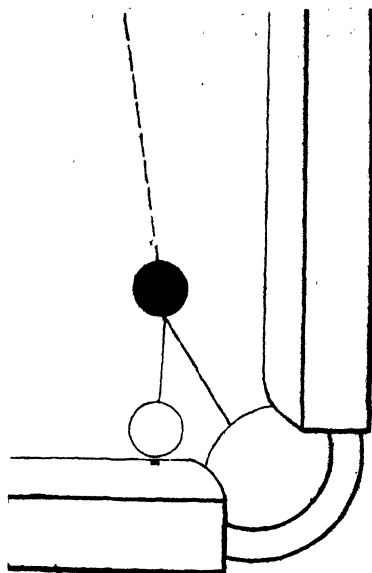


DIAGRAM 979.—A difficult piqué in-off into the left top pocket. Red ball $2\frac{1}{2}$ inches from the side cushion and $5\frac{1}{2}$ inches from the top cushion. Cue ball touching the top cushion and $3\frac{1}{2}$ inches from the nearest point on the side cushion.

Diagram 977. Here, the balls are not in a line with the pocket, consequently the object ball must not be taken quite full. With the balls at the angle shown the object ball must, however, be taken only just a shade less than full or the stroke will fail. When the cue ball after contact with the object ball is thrown on to the side cushion the object ball has not been taken sufficiently full. Side in a piqué stroke of this nature is fatal, consequently care must be taken to avoid hitting the cue ball even slightly to one side.

Diagram 979 illustrates a difficult piqué stroke sometimes played by good players. The cue ball is touching the cushion and consequently the in-off cannot be played as an ordinary screw. Owing to the object ball being some considerable distance from the cue ball—that is for a piqué stroke—the cue has not to be held at all vertically for this stroke. An angle of 45° is

sufficient in this case, and thus the stroke is about half-way between an ordinary screw and a piqué. The object ball must be taken only slightly less than full and the stroke must be sharp and crisp. Side is fatal.

Diagram 980 illustrates another in-off which cannot be made without a considerable uplifting of the cue, and thus, although the stroke is more of a screw than a piqué, there is a good deal of the piqué in it, and the cue ball has only to be moved a very short distance along the cushion towards the pocket to make the in-off more of a piqué than a screw.

In the piqué strokes which have so far been discussed side has to be carefully avoided as its use is fatal. There is, however, a class of piqué strokes in which the use of side is most advantageous and in some cases absolutely necessary.

Diagram 981 shows position for a piqué in-off into a corner pocket. The in-off is possible as a straight-back piqué without any side, but when

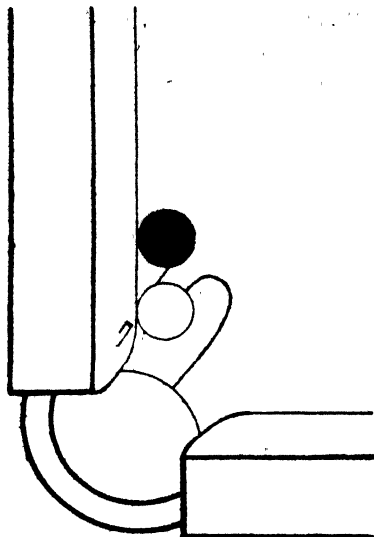
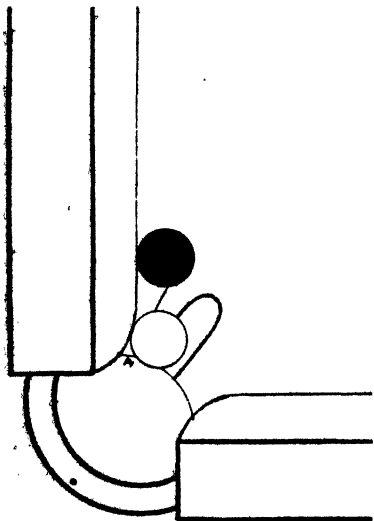


DIAGRAM 981.—A piqué in-off into the right top pocket played with side. Cue ball just past the angle. Red ball about half an inch from the cue ball. Both balls touching the cushion.



2. — A piqué in-off into the right. Cue ball about three-quarters of the red and sufficiently angled to

played in this way a most accurate contact with the object ball is necessary. Should the object ball be taken only just slightly less than full the stroke will fail, and it is no very easy matter to ensure a full contact when in addition to playing with the cue held nearly vertically both balls are touching the cushion. The better way of playing this in-off is to hit the cue ball to the left of the centre but not very far forward—the cue being held nearly vertically—and to take the object ball about half-ball. This contact causes the cue ball to be thrown off to the right, but the strong rotation imparted to it by reason of its being hit high up and to the left of the centre immediately arrests its forward translation and brings it back again in a curve, and when the stroke is well played the ball enters the pocket. The curve which the ball describes in a correctly-played stroke makes the pocket very open as contrasted with the very blind pocket when the in-off

is played as a straight-back piqué without side.

Diagram 982 illustrates a variation of the position shown on Diagram 981. Here, owing to the cue ball being on the angle a piqué in-off is absolutely impossible without the use of side, as the object ball cannot be taken anything like full. By taking it about half-ball and hitting the cue ball high up and to the left of the centre the in-off can be made exactly in the same way as the stroke just described, nor is it any more difficult than this stroke.

Diagram 983 illustrates another beautiful piqué in-off; this time into a centre pocket. Here, the object ball can be taken quite full, but a full contact will not serve as the cue ball cannot possibly enter the pocket as the result of straight recoil. By striking the cue ball high up and to the left of the centre a half-ball contact with the object ball will cause the cue ball to travel back in a curve and this curve takes it into the pocket when the stroke is well played. This piqué in-off is on by the same kind of stroke even when the cue ball is on the angle of the pocket—provided that the object ball can be taken about half-ball—just in the same way as the stroke illustrated on Diagram 982.

In playing the piqué in-offs illustrated on Diagrams 981, 982, and 983 the cue

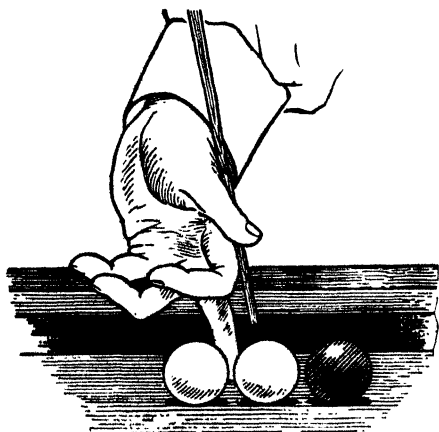


DIAGRAM 984.—A piqué cannon position with the balls in a straight line and close together. Cue ball in the middle. Object balls not more than a quarter of an inch from the cue ball. In order to avoid the likelihood of a foul the first object ball should be taken less than full.

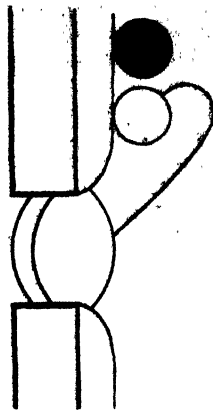


DIAGRAM 983.—A piqué into the left centre pocket. Cue ball just past the angle. Red ball about half an inch from the cue ball. Both balls touching the cushion.

ball should be struck with a smart, crisp stroke, but the cue should not be held quite perpendicularly. The angle of elevation should be anything from about 65° to 80° . The cue should always be well chalked for a piqué stroke, otherwise a miscue may easily occur. When a miscue occurs notwithstanding that the cue has been chalked it generally arises through the cue ball having been hit too near the edge, especially is this the case when the stroke has been played with a nearly vertical cue. First-class players play these close piqué strokes without causing the cue tip to touch the cloth. Their stroke is clean and crisp, but the cue only goes a little way through the ball and is not allowed to descend to the bed of the table.

Diagram 984 illustrates an

occurs at the top of the table may occur anywhere else. The

balls are in a straight line, or nearly so, with the cue ball in the middle, and the distance between it and each object ball is not more than a quarter of an inch. Here, a straight-back piqué cannon is quite a possible stroke, but it is anything but an easy one even for players who are good at piqués owing to the difficulty of making a bridge, for should the stroke be played off the white the red will be in the way, and the object white will be in the way when the stroke is played off the red, and thus the player is very likely to make a foul through touching with his hand the ball in the way, either whilst making his bridge or whilst in the act of playing the stroke. A foul may easily occur also through touching the second object ball with the cue after striking the cue ball. And even though a foul by either of these ways may be avoided the player may fail to make the cannon by reason of his not having been able to make a proper bridge. The danger of making a foul may easily be avoided by playing a half-ball or a shade fuller than half-ball piqué stroke. Playing the stroke this way gives room for the bridge hand and also obviates any possibility of the cue fouling the second object ball. In all piqué strokes in which the object ball is taken less than full the rotation which is imparted to the cue ball by the downward blow of the cue causes this ball to describe a curve quite irrespective of whether it has been struck centrally or not. In the position illustrated on Diagram 984 a less than full contact with the red ball will cause the cue ball to recoil in a curve. The swerve will be more pronounced when the cue ball is struck well to the left of the centre, but as no very pronounced swerve is necessary for the making of this cannon, the cue ball should be struck centrally or just a little to the left of the centre.

Diagram 985 illustrates the kind of the curve which the cue ball makes when the contact in this piqué stroke is slightly fuller than half-ball. The thin intersected semi-circle indicates the cue ball at the moment of its contact with the red, the thick intersected circle its position just before the reverse rotation brings it back, and the thick intersected semicircle its contact with the object white.

Very often with the balls in the position shown on Diagram 984 a cannon could be made off a cushion either by hitting a ball first or by hitting the cushion first, but positions occur in which a cannon by either of these methods is either

impossible or very difficult. For example, with all three balls touching a cushion and still situated as shown on Diagram 984 a cannon off the cushion against which the balls are lying is an impossible stroke.

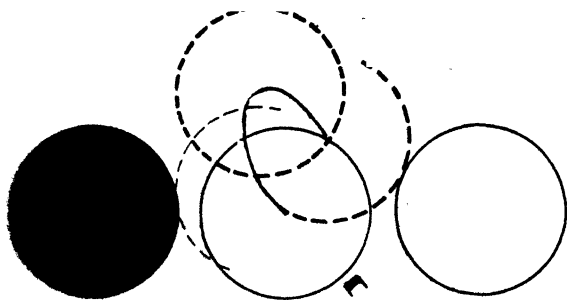


DIAGRAM 985.—A piqué cannon with the balls in the position illustrated on Diagram 984. A slightly fuller than half-ball contact causes the cue ball to describe a curve. The thin intersected circle indicates the cue ball at the moment of its contact with the red, the thick intersected circle its position just before the reverse rotation brings it back, and the thick intersected semicircle its contact with the object white. The curved line indicates the path over which the centre of the cue ball travels.

Massé stroke positions may roughly be divided into two classes, viz., those in which the cue ball is some little distance from the first object ball and those in which it lies quite close to it. The latter are generally the easier, for with the cue ball very near the first object

ball the curve which it has to describe is from one object ball to the other, whereas when the cue ball lies some little distance from the first object ball it not only has to travel in a curve to the first ball but has to take this ball correctly in order that it may travel on to the second ball.

Diagram 986 illustrates the easiest kind of massé cannon. The object balls are about a ball's diameter apart and the cue ball is an eighth of an inch from the red and the position of the balls is such that the cannon is just not on by means of an ordinary thin, grazing stroke. A clean, crisp little stroke with a nearly vertical cue, hitting the cue ball to the right and taking the red thinly will cause the cue ball to swerve to the right after

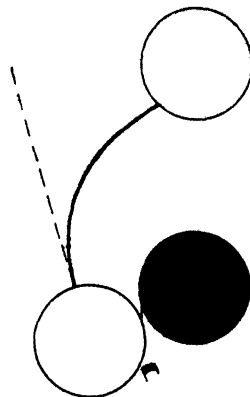


DIAGRAM 986.—A massé cannon. Object balls about a ball's diameter apart. Cue ball an eighth of an inch from the red. The intersected line indicates roughly the line of travel which the cue ball would take as the result of a thin stroke played in the ordinary way and the curved line indicates the manner in which the cue ball travels when the massé is correctly played.

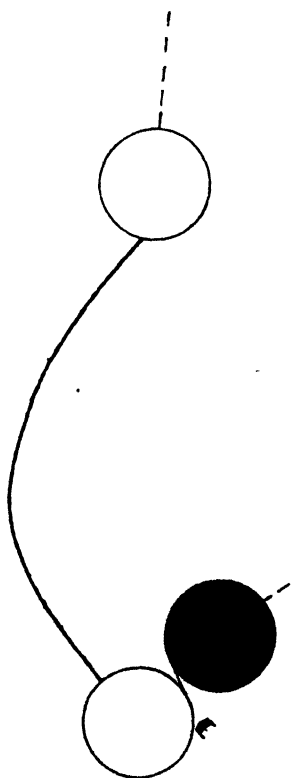


DIAGRAM 987.—A massé cannon. Object balls about 7 or 8 inches apart. Cue ball about an eighth of an inch from the red.

touching the red, thus ensuring the making of the cannon. The intersected line on the diagram indicates the line of travel that the centre of the cue ball would take were a very thin stroke played with a horizontally-held cue, and the continuous line indicates how the natural straight line of travel becomes a curve by reason of the rotation given to the cue ball through its having been struck downwards and on the side. The reason this stroke is the simplest form of a massé cannon is because it cannot be masséd too much. The cue ball has only to describe a slight curve in order for the cannon to be just made, but no matter how pronounced the curve which the cue ball makes may be the stroke cannot be missed, for owing to the object balls being only about a ball's diameter apart the cue ball cannot pass between them.

Diagram 987 illustrates another massé cannon position with the cue ball quite close to the first object ball. The cannon here is much more difficult than the one illustrated on Diagram 986, for owing to the cover being considerably

THE STROKES OF THE GAME.

pronounced the cue ball after its contact with the first ball has to make a very decided curve in order that it may cannon on to the second ball. For this massé the cue should be held nearly vertically and the cue ball must be struck on the right with a light but clean, crisp stroke. As the cue ball after hitting the first ball thinly must travel well out in order to swerve back on to the second ball the player must stand in such a way that the translation or forward line of travel of the cue ball resulting from the blow of the cue may be in a direction that will allow of the ball swerving correctly for the cannon. In other words, the player must first judge how far out the cue ball must travel, and must stand facing the spot to which he wishes his ball to travel previous to its swerve. But though correct stand at the table and correct elevation of the cue are most important elements in the making of a massé stroke, these two factors will not of

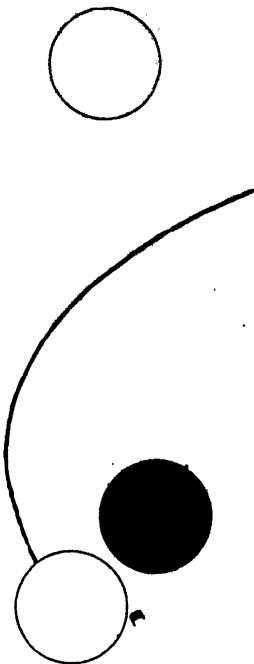


DIAGRAM 988.—The manner in which the stroke may fail when playing the massé cannon illustrated on Diagram 987. The cue ball as the result of its being over-masséd passes between the object balls without touching the second object ball.

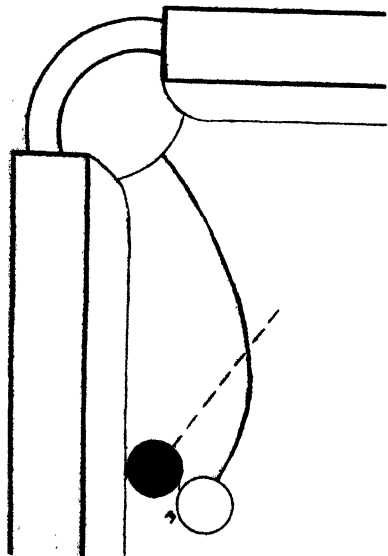


DIAGRAM 989.—A massé in-off into the left top pocket. Red ball touching the side cushion and about 11 inches from the top cushion. Cue ball one-eighth of an inch from the red and about 2 inches from the side cushion.

themselves always ensure success except in the easiest of massé positions. The strength of the stroke, the place where the cue ball is hit and the kind of contact which the cue ball makes with the first object ball are also very great factors in massés, and thus strokes which vary as regards strength, cue contact, and contact with the object ball, will give the cue ball different lines of travel even though the stand at the table and the elevation of the cue remain constant. For example, with the balls in the position shown on Diagram 987 the cannon may be missed by reason of the cue ball being masséd too much. When this happens the cue ball passes between the object balls in the manner indicated on Diagram 988.

When the stroke is over-masséd it is generally because the object ball has

been taken too thinly. The amount of cue-ball rotation which is correct for a contact of a certain degree of thinness becomes too great in relation to a considerably thinner contact.

Diagram 989 illustrates a massé in-off—into the left top pocket—which is

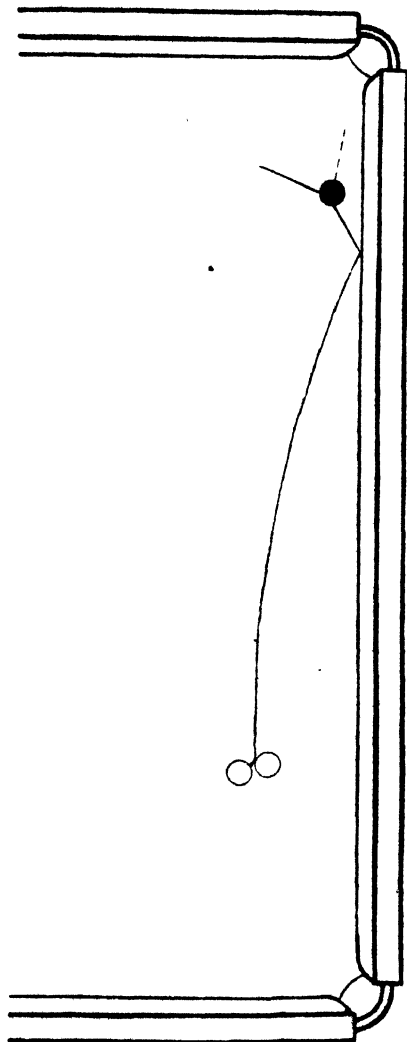


DIAGRAM 989.—A massé cannon with the object balls a long distance apart. The position is intended to be such that a cannon is not possible even by the thinnest of strokes

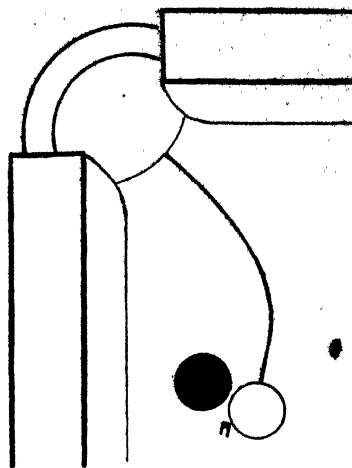


DIAGRAM 990.—A massé in-off into the right top pocket. Red ball a ball's diameter from the top cushion and 9 inches from the side cushion. Cue ball an eighth of an inch from the red and twice the diameter of a ball from the cushion.

exactly the same kind of stroke as the massé cannon illustrated on Diagram 987. The difficulty of this in-off to a player who can massé a ball quite easily lies in accurately gauging the amount of masséing required. If the stroke is not sufficiently masséd the cue ball will strike the top cushion, and if on the other hand it is masséd too much the ball will strike the side cushion in front of the pocket. When the object ball is not more than 10 or 12 inches from the pocket and the cue ball is quite close to the object ball and very little behind it, this massé in-off is not a very difficult stroke to a player who is good at massés, but as the distance of the object ball from the pocket is increased the stroke becomes more and more difficult. In the massé illustrated on the diagram the curve which the cue ball must describe in order that the stroke may be successful makes the pocket less blind than it otherwise would be.

Diagram 990 shows a variation of the last stroke. Here, the massé in-off although of exactly the same nature as

the other is less difficult owing to the pocket being quite open.

Diagram 991 illustrates a massé position with the object balls a long distance apart. For this stroke the cue should be held at an angle of about 45° in order that sufficient translation may be given to the cue ball. A stroke from a nearly vertical cue would cause the cue ball to make a short, pronounced curve to the cushion and thus the cannon would fail. The less the elevation of the cue the less will the ball swerve and the more it will travel forward, consequently in all massé strokes

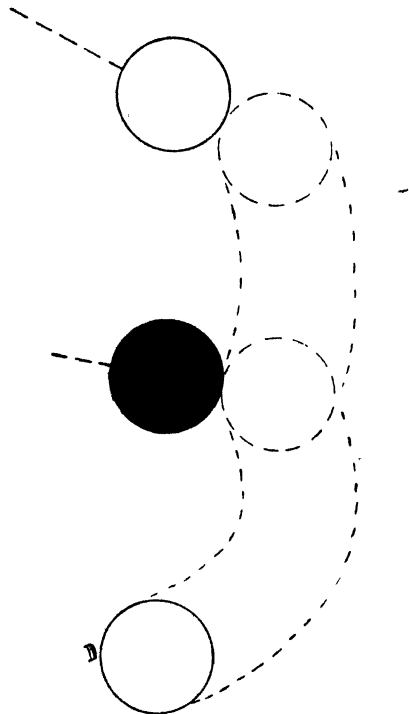


DIAGRAM 993.—A massé cannon with the three balls in a dead straight line. The intersected lines indicate the cue ball's line of travel and the intersected circles show the cue ball's contact with the object balls. As shown, the cue ball's swerve is more pronounced previous to its contact with the red than after it. Red ball $3\frac{1}{2}$ inches from the cue ball. Object white $3\frac{1}{2}$ inches from the red.

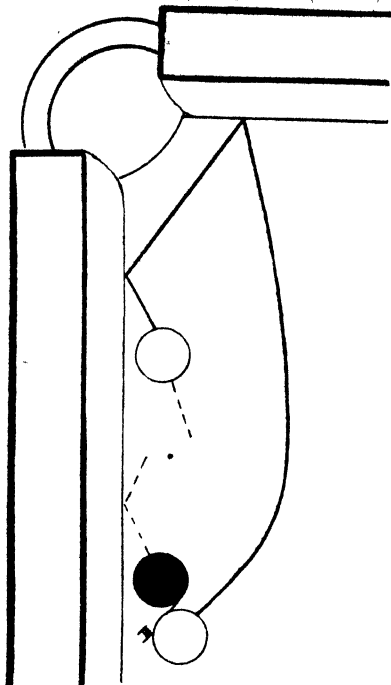


DIAGRAM 992.—A massé cannon off a cushion. Object white about half an inch from the top cushion and about 9 inches from the side cushion. Red ball half an inch from the top cushion and 22 inches from the side cushion. Cue ball $1\frac{1}{4}$ inches from the top cushion and about an eighth to a quarter of an inch from the red.

it is of supreme importance that the elevation of the cue be regulated to the distance which the cue ball has to travel forward after its contact with the first object ball. In the stroke illustrated on the diagram, the proximity of the second object ball to the cushion makes the massé cannon a great deal easier than it would otherwise be.

Diagram 992 shows another massé position with the cue ball very close to the object ball. Here, it is quite possible to make a cannon by a direct stroke after the manner of the massé illustrated on Diagram 987, but owing to the cover being much more pronounced than in the position shown on Diagram 987 a direct massé

is a very difficult stroke. In order that the cannon may be made by means of a ball-to-ball stroke the cue ball must travel well out and then return with a very pronounced swerve, and such a stroke is only possible by means of a very powerful massé. The cannon is a much less difficult stroke when played as a massé off the side cushion as illustrated on the diagram. The side with which the massé must in any case be played is the correct side off the side cushion. Better position as a rule results from a successful stroke when the cannon is made off the side cushion than from a ball-to-ball massé.

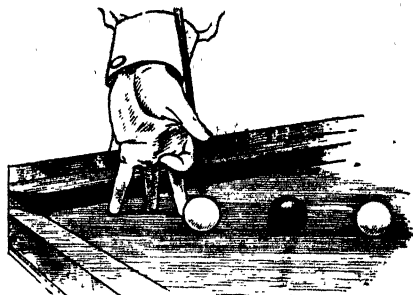


DIAGRAM 994.—The playing of the stroke shown on Diagram 993.

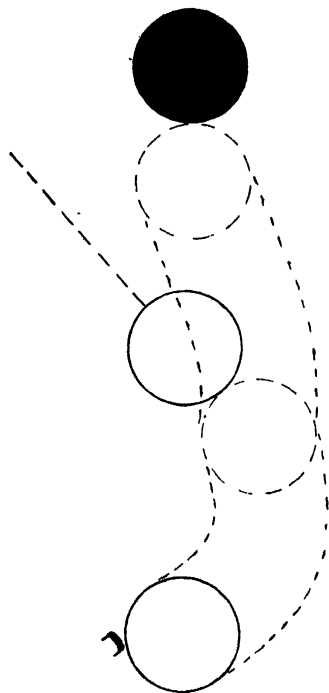


DIAGRAM 995.—A massé cannon by means of a kind of run-through stroke. This cannon often results from an attempt to get the cannon in the manner illustrated on Diagram 993. All three balls in a straight line. Object white $3\frac{1}{2}$ inches from the cue ball. Red $3\frac{1}{2}$ inches from the white. The intersected circles indicate the cue ball at the moment of its contact with object balls.

In fact, the cannon off the side cushion often bunches the balls. Occasionally when the stroke is masséd too much for a cannon off the side cushion, but not enough for a ball-to-ball cannon the cue ball enters the pocket.

Diagram 993 illustrates the most difficult kind of massé. Here, the three balls are in a straight line with the cue ball a considerable distance—for a massé stroke—from the first object ball. As the cue ball must describe a short, pronounced curve the elevation of the cue must be nearly vertical and the ball must be struck with a sharp, crisp little blow.

Diagram 994 illustrates the playing of the stroke. When the stroke is perfectly played the cue does not descend to the table and the cue ball curves to the object ball, and after taking it well to the side travels in another curve—though a less pronounced one—to the second ball. Very often this massé cannon is made somewhat differently from the way shown on Diagram 993. The stroke has been played with the intention of making it in the manner illustrated on this diagram, but the contact with the first ball has not been sufficiently to the side, with the result that the cue ball has run through it to the second ball.

Diagram 995 roughly indicates the cue ball's line of travel when after curving to the first object ball it

through it to the other ball. The cannon often fails by reason of the cue ball's running through the first ball and passing the second object ball on the inside. In the positions shown on Diagrams 993 and 995 this would be to the left.

On Diagram 993 the cannon is by means of a massé to the right of the red, but it can, of course, also be made by means of a massé to the other side of the ball. When the three balls are in a dead straight line the massé is, however, generally easier on one side than the other; this is because the player can, as a rule, get into a much better position for a massé round one way than round the other. In fact, when the cue ball is some distance from the cushion it is often only possible to get into position for a massé round one side and even then the position may be a very cramped one, and a massé ceases

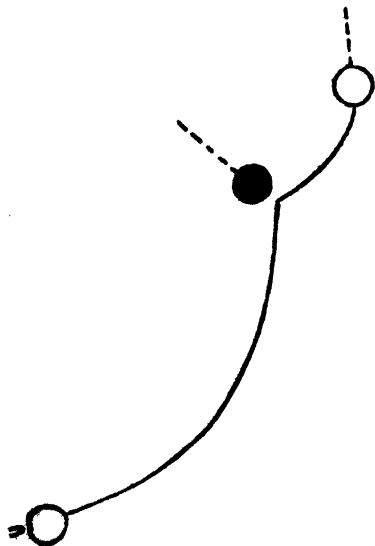


DIAGRAM 997.—An extremely difficult massé cannon. Red ball about 5 or 6 inches from the object white. Cue ball 18 inches from the red ball. Red ball only slightly covering the white ball. Cue ball must be run on.

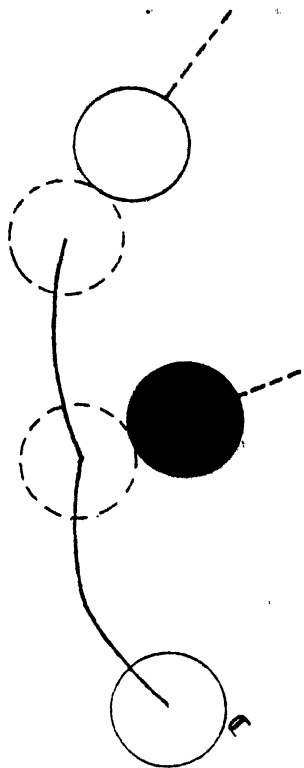


DIAGRAM 996.—A massé cannon. The curved line indicates the path over which the centre of the cue ball passes when the stroke is correctly played and the intersected circles indicate the cue ball at the moment of its contact with the object balls. Middle ball nearly in a line with the others. Object balls $3\frac{1}{2}$ inches apart. Cue ball $3\frac{1}{2}$ inches from the nearer object ball.

to be a possible stroke when the cue ball is so far from a cushion that the player cannot get sufficiently over it to massé it. Again, when the three balls are not quite in a straight line the first object ball must be taken on the inside. That is to say in the position illustrated on Diagram 996 it must be taken on the left, for although a massé round to the right is not an impossible stroke it is a far more difficult one than a massé off the left side of the ball.

Diagram 997 illustrates an extremely

difficult massé cannon. As the cue ball is a long way from the object balls the elevation of the cue must be a good deal less than vertical, otherwise the cue ball will not travel sufficiently forward and will describe too short a curve. In order that the curve may be as indicated on the diagram the direction given to the cue ball as it leaves the cue must be well away from the object ball.

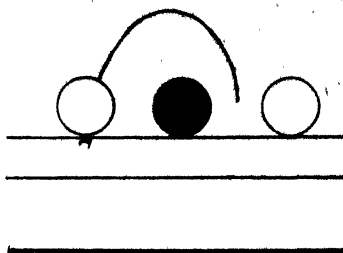


DIAGRAM 998.—A difficult massé cannon. All three balls touching the cushion. Cue ball about $1\frac{1}{2}$ inches from the red. Object balls about a ball's diameter apart.

Diagram 998 illustrates a very difficult massé with all three balls touching a cushion, the object balls being only about a ball's diameter apart and the cue ball being rather less than this distance from the nearer object ball. For this massé the cue must be held nearly vertically in order that very little translation may be given to the cue ball. The direction given to the cue ball as it leaves the cue must be right away from the object balls and the blow of the cue must be a light one but at the same time sharp and crisp in order to give the cue ball the maximum of rotation and cause it to describe the very pronounced little curve indicated on the diagram. In the position shown on the diagram the cue ball must of course be struck to the right of its centre. With the balls in the same position as regards distance from each other but well away from a cushion the massé cannon is a very much easier stroke, for there is no need to cause the cue ball to go right out and return as on Diagram 998. Instead all that is needed is a moderate curve which will cause the cue ball to get well on to the edge of the first object ball. When the balls are touching a cushion or quite close to it the cannon cannot be made in this way as the cue ball is immediately kissed away unless it gets between the object balls, and it can only get between them when the curve is of the nature of the one illustrated on Diagram 998.

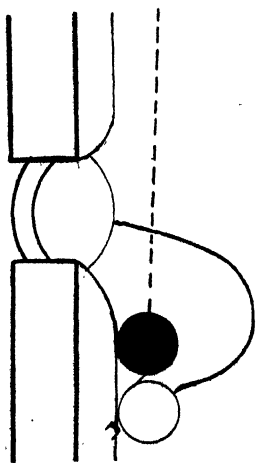


DIAGRAM 999.—A difficult massé in-off. Red ball touching the side cushion close to the beginning of the angle. Cue ball also touching the cushion and about a quarter to half an inch from the red.

Diagram 999 illustrates a very difficult massé in-off. For this stroke the cue must be held practically vertically and the contact with the object ball must be a fullish one, as the cue ball after following through the object ball a short distance has to make a very pronounced little curve to enter the pocket. A sharp clean blow is necessary for this massé in-off and the cue ball must be struck to the left of its centre.

Diagram 1000 illustrates a very beautiful massé stroke which is sometimes given in an exhibition of fancy strokes by professional players. In this stroke the object ball is taken thinly and the direction given to the cue ball is right away from the

balls. Whilst the cue ball is travelling forward the object ball has time to get out of the way—as indicated by the intersected line on the diagram—and thus the cue ball can return and cannon on to the second ball. Although this fancy cannon is generally called a *massé* it is really more in the nature of a *piqué* stroke, for the cue ball returns towards the striker after its forward translation. For this stroke the cue should be held almost vertically and the ball should be struck a sharp, crisp blow, the cue not being allowed to come down on to the cloth.

Diagram 1001 illustrates an in-off which is sometimes played by good players. The position is intended to be such that even with a grazing stroke the in-off is just not on. For this in-off the player should stand exactly facing the two balls and with a vertically-held cue play as it were to *piqué* his ball into the pocket just as though there were no

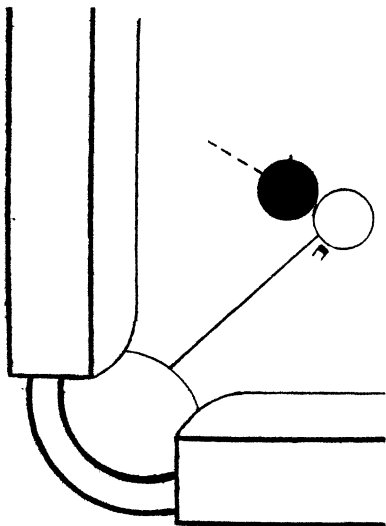


DIAGRAM 1001.—A difficult in-off which is in the nature of a *piqué* shot, owing to its being played without side. When the stroke is correctly played the cue ball after taking the object ball quite thinly travels forward a very short distance and then returns to the pocket. The playing of the stroke is illustrated on Diagram 1002.

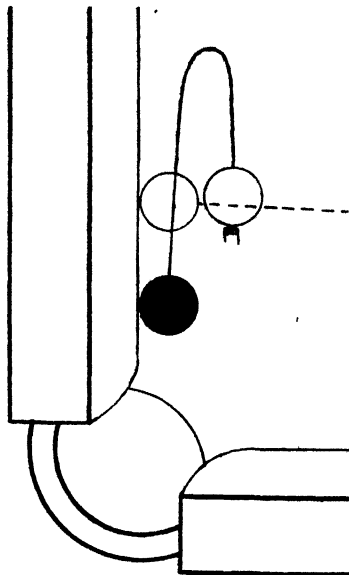


DIAGRAM 1000.—A difficult fancy stroke. The cue ball after taking the object white thinly has to travel forward and then return to the red. The intersected line indicates how the object white travels away from the cushion before the cue ball returns to the red. Object balls touching the cushion and about a ball's diameter apart. Cue ball about an eighth of an inch from the white.

object ball close to the cue ball. By taking the object ball quite thinly and *using no side* the cue ball can be made to travel in a straight line to the pocket. A sharp, crisp little stroke is necessary for this in-off and when it is correctly played the cue should not descend to the cloth. The pocket is very open for this stroke, which is really more of a *piqué* than a *massé*, especially as the ball has to be struck at the centre and not to one side of the centre as is the case with ordinary *massé* strokes. Diagram 1002 illustrates the playing of the stroke.

Diagram 1003 illustrates a position that occasionally occurs. The red is over a baulk pocket and the cue ball is touching the cushion and about 3 or 4 inches from the red. Owing, however, to the red being on the angle a six-shot is not possible in the ordinary

PIQUE AND MASSE STROKES.

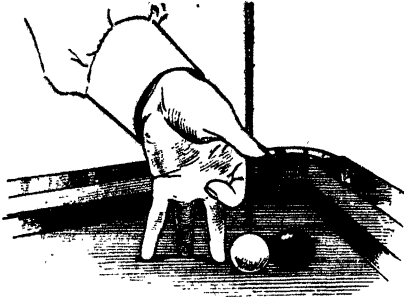


DIAGRAM 1002.—The playing of the in-off illustrated on Diagram 999.

Diagram 1004 illustrates a position which is of frequent occurrence. The *massé in-off* is a difficult stroke as the cue ball must describe a short but pronounced curve. When the stroke is successful the cue ball may enter the pocket direct off the white, or it may curve to and strike the far angle of the pocket previous to its contact with the object ball. Unless there is a fair amount of room between the object white and the opposite cushion this *massé in-off* is a very difficult stroke even for a good *massé* player. On the other hand when there is just nice room to the pocket a three miss may be given as the result of a very excellent *massé*.

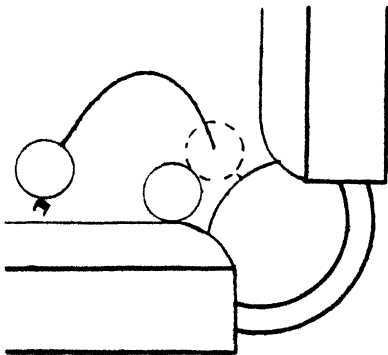


DIAGRAM 1004.—A *massé in off* into the

quite close to the beginning of the angle. Cue ball about 3 inches from the white and one inch from the top cushion.

way. The position of the object white may be such that a six-shot would give a splendid leave, whereas it might be very difficult to get good position by means of a pot only. To a good *massé* player the six-shot is not a very difficult stroke. By elevating the cue, the cue ball may be made to travel to the red in the curve indicated on the diagram and thus by travelling to the red in a different direction from the ordinary one the cue ball can follow it into the pocket.

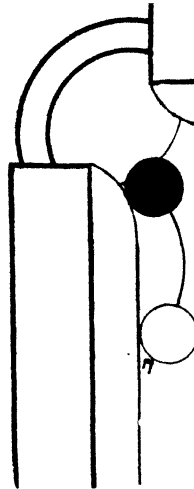


DIAGRAM 1003.—A *massé six-shot*. Red ball on the angle of the left baulk pocket. Cue ball touching the baulk cushion and about $3\frac{1}{2}$ inches from the red.

Diagram 1005 illustrates an awkward position that may occasionally occur. Here no in-off is on by means of a thin stroke nor is a pot on by means of a fine cut. A *massé in-off* is an extremely difficult stroke, as owing to the situation of the balls a player can only attempt such a stroke from an uncomfortable and cramped position. A pot by a *massé* in the manner shown on the

very
out at least the player can get
easy position for the stroke.
generally termed a *massé*, this pot

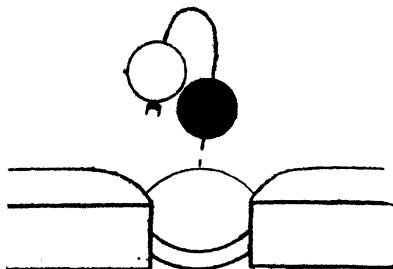


DIAGRAM 1005. — A massé pot. An extremely difficult stroke. The position of the balls is intended to be such that an in-off is not possible by means of a grazing stroke nor a pot by the thinnest of thin cuts. Cue ball about one-sixteenth of an inch from the red.

Diagram 1006 illustrates another pot into a centre pocket by means of a stroke which causes the cue ball to travel away from the red and then to return to it. This stroke is of exactly the same nature as the one illustrated on Diagram 1005 except that no massé in-off is on owing to its being impossible to get into proper position for such a stroke. Similarly awkward positions with the cue ball quite close to the red

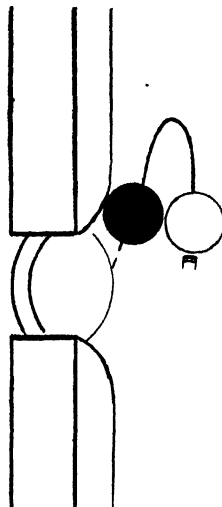


DIAGRAM 1006. — A massé pot. An extremely difficult stroke. The position of the balls is intended to be such that neither an in-off nor a pot is possible by means of a grazing stroke. Cue ball about one-sixteenth of an inch from the red.

occasionally occur near the brink of a corner pocket, and when a massé in-off is a more or less impracticable stroke the pot is often quite possible by the kind of stroke illustrated on Diagrams 1005 and 1006.

As a rule, a massé cannon is only played when owing to a cover a cannon cannot be made by means of a thin stroke or a run-through. Very good players, however, sometimes play a massé stroke for the retention of position when a cannon by a run-through is easily on, but in a position that is

DIAGRAM 1007.—A massé cannon for the retention of position. Red ball about 2 inches from the object white. Cue ball about one inch from the red. The position of the balls is intended to be such that whilst a cannon is easily on by means of a run-through stroke it is quite impossible as a thin stroke.

Diagram 1007 is illustrative of commonly-occurring positions at the top of the table. Here, a run-through cannon is quite an easy stroke owing to

there being plenty of room for the red to pass the white. The run-through stroke however sends the red ball down the table and the cue ball's proximity to it prevents the stroke being played with sufficient speed to bring it up the table again. A run-through stroke therefore leads to doubtful if not poor after-position. A well-played massé on the other hand disturbs the balls but little and very good after-position may be obtained by its means.

CHAPTER XLIV.

SINGLE BAULKS AND DOUBLE BAULKS.

Good players after losing the object white generally play for a double baulk. Of course it will often happen that the stroke which causes the loss of the white gives the player good position as regards the red ball, and thus the player is enabled to go on scoring. It is, however, a mistake to attempt to continue a break after losing the white unless the stroke to be played is very nearly a certainty. Especially is this so when the stroke is of such a nature that the after-position which will result from it is more or less obscure. When a player after losing the object white attempts to score off the red and fails to do so, he more often than not leaves good position for his opponent who is in hand, and thus he may lose all the advantage he may have gained by his last break. Therefore when the stroke is not quite a certainty the correct thing to do is to close up the game for one's opponent. This can be done in three ways, viz., by a stroke which causes both balls to enter and remain in baulk, secondly by a stroke which places the red in baulk and the cue ball in some safe place out of baulk, or which sends the cue ball into baulk and places the red in some safe place out of baulk, and thirdly by giving a miss which places the ball over the line, the red ball in this case being, of course, so positioned that it is practically safe as regards an in-off or a pot from the D. Of the three ways of closing up the game the double-baulk stroke if at all reasonably on is the best. The red ball and the cue ball may, however, be so situated that it is impossible to get both balls inside the line, and when this is so the game is either a miss into baulk or a stroke off the red which will place one of the balls in baulk. Again, the position may be such that although a stroke to leave a double baulk presents no difficulty to a good player such a stroke will in all probability result in failure when essayed by a very moderate player, and consequently when a player has lost the object white and the red is in some safe position as regards any stroke from the D, he should be satisfied to place *one* ball in baulk should a stroke to place both balls inside the line present any difficulty to him.

A stroke to leave a double baulk is often so easy a shot that the most moderate of players can hardly fail at it. The red may already be in baulk or if out of baulk the cue ball may be so placed above it that the simplest of strokes is all that is required to leave both balls inside the line. The good player when closing up the game for his opponent by means of a double baulk is not, however, satisfied with a stroke which though it leaves both balls inside the line leaves them *anywhere*. He wants a good scoring position for his next stroke in the event of his opponent's failing to score from the position which has been set up or even to disturb a ball. He plays, therefore, to place the red somewhere near one of the pockets—but not quite close to it, for with the red quite near the pocket his opponent would have a position from which he might easily score—in order to have position for a pot or an in-off—preferably the latter—when he goes to the table again. He also takes care that his ball comes to rest some considerable distance from the red, for the farther apart the balls are in double-baulk positions the more difficult is it to get a cannon.

Diagram 1008 illustrates a very simple stroke to leave a double baulk and indicates how the balls may be placed in position for an in-off. Here, the

stroke, if played with anything like good strength, is bound to cause the balls to come to rest a long way from each other.

Diagram 1009 illustrates another position from which a double baulk is easily obtained. Many players faced with a position similar to this play to dribble the red to the pocket, but this is an unsound way of playing the double baulk, for in the first place with the red ball some little distance from the baulk line a fullish contact with it may easily cause the cue ball to remain out of baulk owing to the gentle strength with which the stroke must be played to dribble the red to the pocket. Secondly, as in this stroke the red travels close to the cushion it may come

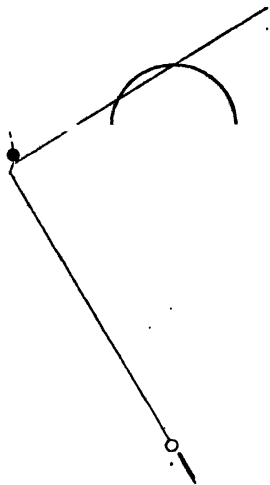


DIAGRAM 1009.—A double-baulk stroke hitting the cushion in front of the ball and placing the red in the vicinity of the pocket, the cue ball travelling to the other side of the table. • Red ball about half an inch from the cushion and 5 or 6 inches from the baulk line. Cue ball on the central line of the

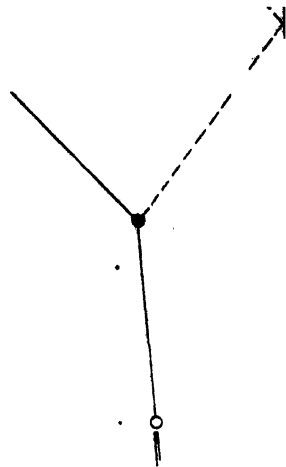


DIAGRAM 1008.—A double-baulk stroke sending the red to the vicinity of the pocket and the cue ball to the other side of the table.

to rest right over the pocket—thus giving the opponent a good chance of a pot—or it may even enter it, and should it stop several inches short of the pocket it may come to rest quite close to the cushion if not actually touching it, and when this happens the opponent can give a safety miss and thus leave little else than a pot of a nature which seldom yields good after-position. The better way of playing the double baulk is by striking the cushion just in front of the red but close up to it, using some running side for the stroke. When the stroke is correctly played the balls will travel more or less as indicated by the lines on the diagram and thus position may be left for an in-off in the event of the opponent failing to disturb either

Diagram 1010 shows a position which is typical of commonly.

positions. The player has perhaps played a top-pocket in-off from the white, and in addition to getting his stroke has lost the object white in the other top pocket. With the red close to the cushion and a few inches out of baulk he has nothing to play for but a double baulk. The stroke is an easy one, for all that is necessary for its success is to double the red into baulk, and to play with sufficient pace to cause the cue ball to travel round the table and cross the line. But although very moderate players can quite easily get this double baulk, it is one thing to leave both balls in baulk and another thing to place them in position for an easy scoring stroke in the event of the opponent's not succeeding in disturbing either ball. The principle of the stroke is to double the red to the vicinity of the pocket—as illustrated on the diagram—and as the cue ball has to travel with sufficient speed to enter baulk after running all round the table it follows that a fullish contact with the red must impart considerable speed to this ball.

In order, therefore, that the speed with which the red ball travels may be no greater than that which will leave it in the vicinity of the pocket the cue ball's contact with it must be a somewhat thinnish one, and the stroke should be played with running side as running side helps to bring the cue ball well round the table. A well-played stroke generally leaves position for an in-off. When; on the other hand, too full a contact is made with the red this ball is doubled across the table on to the side cushion whence it may rebound to somewhere near the middle of the baulk enclosure or even to the opposite cushion, and the result of such a stroke is generally a bad leave. On Diagram 1010 the red ball is about 10 inches from the baulk line, but the same kind of double baulk may be played with the red farther and farther from baulk until it lies—still near the cushion—about half-way between the baulk line and the centre pocket or even a shade higher up the table than this, with this difference, that the higher up the table it lies the nearer the far end of the D must the cue ball be spotted in order to make the angle for the double of the same nature as the one on Diagram 1010.

When the red ball—still close to the cushion—is appreciably nearer the centre pocket than the baulk line the stroke to leave a double baulk is played in just the reverse way to the one illustrated on Diagram 1010, that is to say the red ball is made to travel round the table and the cue ball makes the short journey into baulk.

Diagram 1011 illustrates this stroke. High pace is necessary and the contact with the red must be a very fullish one, firstly in order to give the ball

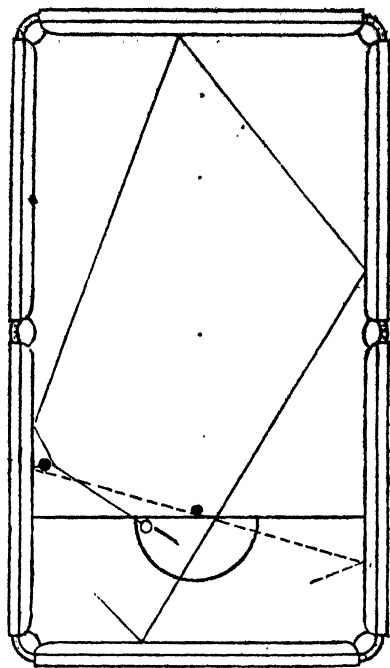


DIAGRAM 1010.—A double-baulk stroke played from the D with running side, the contact with the red being considerably thinner than half-ball. Red ball one inch from the cushion and about 10 inches from the baulk line.

a good line of travel round the table, secondly in order that a good deal of the cue ball's pace may be imparted to it, and thirdly to deaden the pace of the cue ball so that it may cross the baulk line without much speed. The stroke should be played with some screw and running side. When the contact with the red is not sufficiently full the cue ball will often travel through baulk and out again.

Diagram 1012 shows the red in baulk and the cue ball out of baulk in two different places. In positions of this nature it is unsound play to hit the red. Instead the cue ball should be placed in position for an in-off from the red. In one of the positions shown on the diagram the cue ball could be placed for the in-off from the red by causing it to

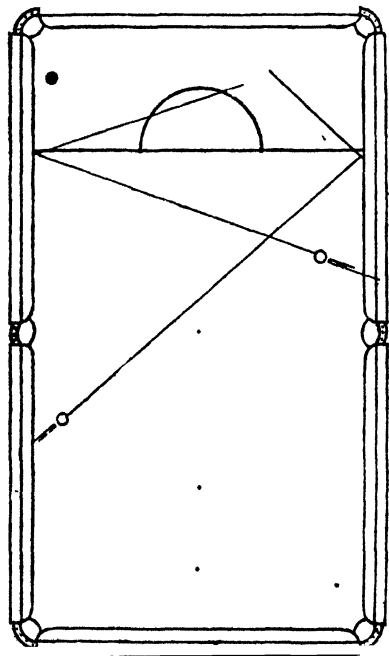


DIAGRAM 1012.—A miss into baulk from two different positions in order to leave the cue ball well placed in relation to the red, and the balls far apart for the opponent. Much sounder play than a stroke on to the red.

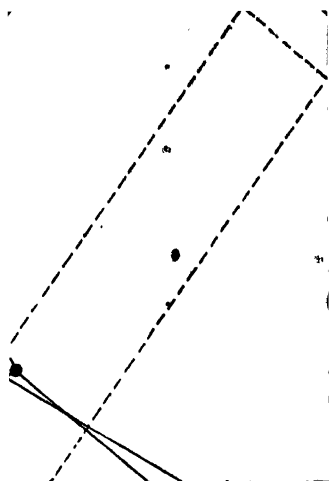


DIAGRAM 1011.—A double-baulk stroke from the D played with screw and high pace. A fullish contact gives the red ball a good line of travel and also causes the cue ball to cross the line without much speed. Red ball one inch from the cushion and about 10 inches from the centre pocket.

travel into baulk on a line parallel to the cushion, but the better way of getting position for the in-off is by making the ball travel twice across the table as illustrated on the diagram. Considerably more latitude exists as regards what is good strength when the stroke is played this way than when the ball is sent into baulk by a direct stroke.

Diagram 1013 shows the red ball in baulk again. If the player is in hand it is not much use to give a miss in baulk, for owing to the situation of the red position for a simple in-off cannot be obtained by means of a miss. Instead the cue ball should be sent up and down the table with the object of hitting the red as illustrated on the diagram. The stroke should be played

with little more strength than is necessary to cause the cue ball to reach the red. In this way the cue ball will remain in baulk whether it hits the red or not. Good position for an in-off will often be left by this stroke when the cue ball touches the side cushion just before hitting the red.

Diagram 1014 illustrates a double-baulk stroke often played by good players, when the red is on the spot and the cue ball is about the same distance from the top cushion as the red. In order to give the red ball a good line of travel a thinnish contact is necessary and this being so plenty of pace must be used in order that the ball may travel with sufficient speed to reach the baulk enclosure. In order that the cue ball may also travel with good direction

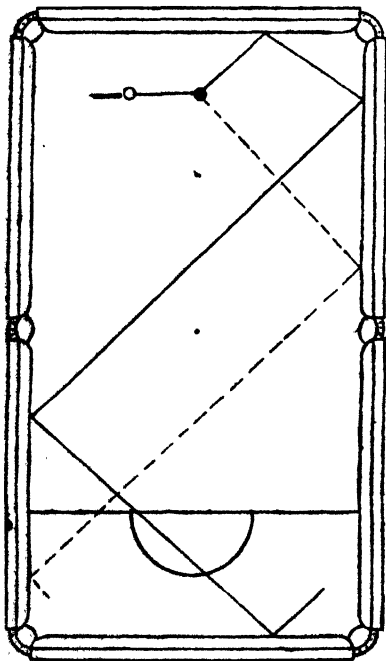


DIAGRAM 1014. — A double-baulk stroke played with running side and screw. A thinnish contact gives the red ball a good line of travel. Red on the spot. Cue ball about the same distance from the top cushion as the red and about 12 or 15 inches from this ball.

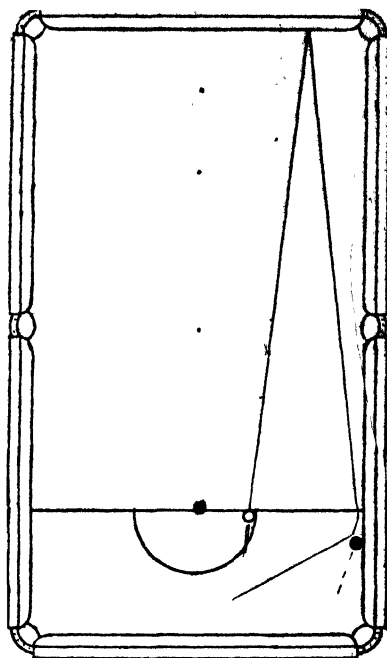


DIAGRAM 1013. — A stroke to place the red in a better position. The strength of the stroke must be so gauged that in the event of failure to hit the red the cue ball may remain in baulk.

the stroke should be played with running side and screw. With the balls in the position shown on the diagram if the stroke be played without screw the cue ball will strike the top cushion considerably nearer the pocket than as shown on the diagram, and this will in all probability result either in its catching the lower angle of the centre pocket—that is the nearer angle, looking at the pocket from baulk—and thus remaining out of baulk, or else in its striking the second cushion *above* the pocket, instead of below the pocket as shown on the diagram. When a ball in travelling round the table goes direct from one side cushion to another side cushion running side off the first side cushion is check side off the second side cushion, and thus in the stroke under discussion when the cue ball takes the

second side cushion above the pocket instead of below it it will in all probability remain out of baulk by reason of the running side having become check side, and also because of the much greater distance it must travel in order to cross the baulk line in the former case than in the latter. If a line commencing at a point just a few inches above the centre pocket be drawn parallel to the line on the diagram from the side cushion to baulk, it will be found that the distance to the baulk line in the one case is about double that in the other.

Diagram 1015 illustrates another double-baulk stroke with the red on the spot, the player, however, in this instance being in hand. This stroke is not a very difficult one for any fair player, but it is seldom played by good players because it more often than not leaves the cue ball badly placed in relation to the red, and to risk the possibility of failure to leave a double baulk when success as

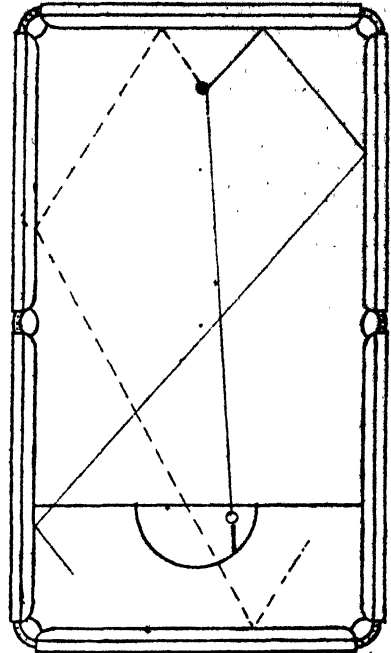


DIAGRAM 1015.—A double-baulk stroke played from the D. Red ball on the spot.

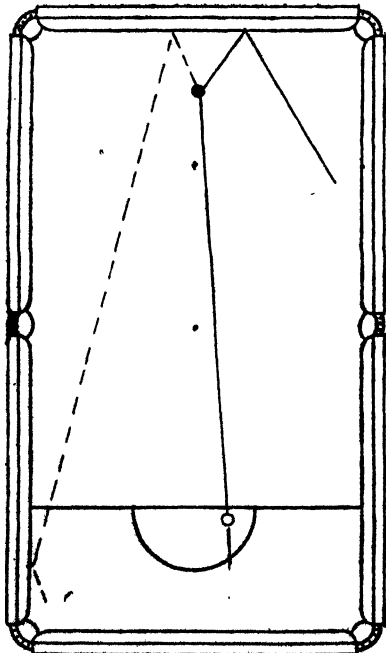


DIAGRAM 1016.—A single-baulk stroke played from the D. Red ball on the spot.

regards bringing both balls into baulk generally means a poor leave is hardly sound billiards. A bad double baulk gives no advantage to the player who has played the stroke and is often decidedly against him, for the opponent answers by giving a safety miss and the double baulk is often of such a nature that in giving this safety miss the opponent can place his ball in a commanding position as regards the red and the pocket, thus in all probability compelling his antagonist to go out for some very difficult stroke. Occasionally, however, the stroke illustrated on Diagram 1015 is a very serviceable one. For example, if one's opponent only wants one for game some stroke off the red must be played and in such circumstances a stroke that leaves a double baulk even if it leaves nothing else is a very useful one and may easily be the means of saving the game. For this double-baulk stroke the cue ball should

be placed at or near the end of the D and the red ball should be taken fuller than half-ball, and the stroke should be played with running side and with plenty of pace. When the contact with the red is a good one failure to leave a double baulk more often results from want of pace than excess of it. The red will inevitably remain out of baulk when the cue ball makes a thinnish contact with it, and as the result of such a contact the cue ball will often pass through baulk and out again.

Diagram 1016 illustrates an alternative stroke to the one shown on Diagram 1015. This single-baulk stroke is often played by good players as an opening stroke and is an old pool shot. The pool player by a good stroke places his ball in safety and at the same time has a chance of taking a ball. The billiard player when playing this stroke is not particularly anxious that the red should enter the baulk pocket, in fact he does not desire this; all that he wants is to place the red near the pocket and his own ball close to the side cushion more or less in the manner indicated on the diagram. For this stroke the cue ball should be placed well to the side of the D and the red must be taken very full in order that it may be given a good line of travel. A fair amount of pace is required for this stroke. Players trying it for the first time generally leave the red ball out of baulk through using too slow a stroke.

Diagram 1017 illustrates a double-baulk stroke which is frequently played by good players. The stroke is a run-through played with plenty of top, running side and pace. When the stroke is well played the red is doubled across the table to the vicinity of the corner pocket and the cue ball rebounds from the side cushion at a much more acute angle by reason of the side which it carries. The full contact with the red which is necessary in this stroke greatly checks the speed of the cue ball which is due to the blow of the cue, but the combined effect of the top and side enables the ball to rebound from the cushion with sufficient speed to carry it well into baulk.

Diagram 1018 illustrates a variation of the position shown on Diagram 1017. The red is near the side cushion as before, but the cue ball is not sufficiently above it to allow of a double baulk being obtained by means of a run-through stroke. Here, therefore, the red must be doubled across the table into baulk and the cue ball must travel round the table *via* the side, top and side cushions in the manner indicated on the diagram. Whilst the stroke is not exactly a difficult one, contact and pace have to be nicely gauged. The red may either be doubled to the vicinity of the baulk pocket on the opposite side of the table,

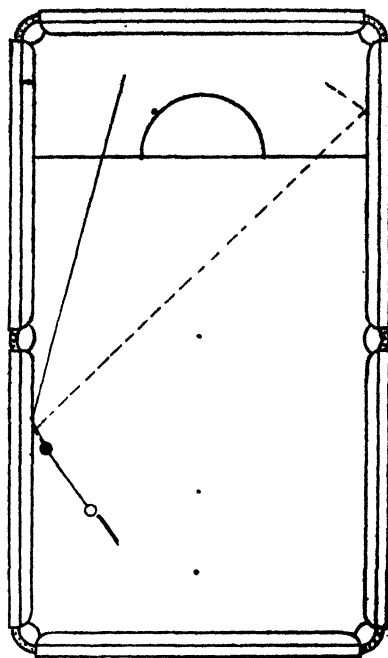


DIAGRAM 1017.—A double-baulk stroke played with strong running side and top. Red ball $1\frac{1}{2}$ inches from the side cushion and 45 inches from the top cushion. Cue ball 14 inches from the side cushion and 28 inches from the top cushion.

or by a fuller stroke twice across the table to the other pocket, and the strength of the stroke must necessarily be regulated to the kind of contact played for. Running side should be used for the stroke.

Positions often occur which as regards getting a double baulk present little or no difficulty to a very good player, but which are extremely awkward to more moderate players, and unless a player feels very certain of success it is never good policy to play for a double baulk when he can leave safety either by giving a miss or by sending one ball into baulk.

Diagram 1019 illustrates a position which with variations which do not affect the stroke to be played is of common occurrence. It is quite possible to get a double baulk from this position, but it is a good deal easier to fail at the

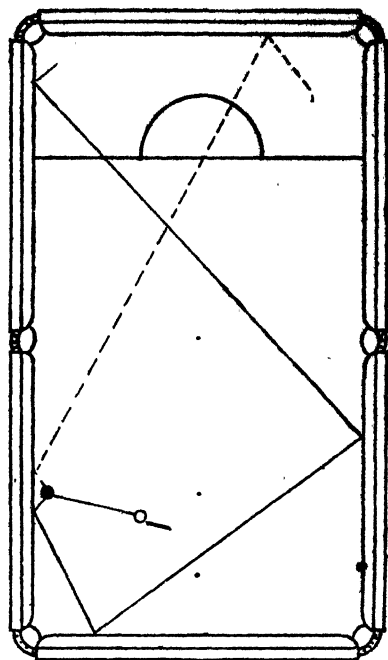


DIAGRAM 1018.—A double-baulk stroke played with running side. Red ball 2 inches from the side cushion and 34 inches from the top cushion. Cue ball 24 inches from the side cushion and 29 inches from the top cushion.

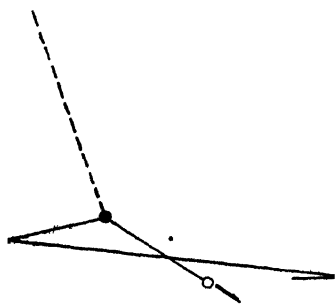


DIAGRAM 1019.—A single-baulk stroke.

40 inches from the top cushion. Cue ball 17 inches from the top cushion and 20 inches from the side cushion.

stroke, and failure to leave a double baulk often gives one's opponent a splendid opening. Again, even when a double baulk is gained the position of the balls in baulk may be a very bad one and when this happens to be so the advantage is to the opponent should he give a good safety miss. An alternative stroke to a double baulk is illustrated on the diagram. The red is cut down the table to the vicinity of the baulk pocket and the cue ball travels across the table to take up some safe position near the side cushion. Of course the strength and contact have to be nicely regulated, and a careless stroke may easily leave the cue ball somewhere near the central line of the

nevertheless the stroke illustrated on the diagram is a much easier one than

any double-baulk stroke, and if at all well played the opponent will have a most uninviting position, and in the event of the red having been placed near the pocket he will most likely leave good position should he go out for a difficult cannon and fail to score. In some variations of the position shown on Diagram 1019 the cue ball has to travel twice across the table in order to run safe. This is the case when a thinnish and fairly fast stroke is necessary to cut the red into baulk.

Diagram 1020 illustrates a double-baulk stroke frequently played by good players. In order to give the red a good line of travel it must be taken somewhat fuller than half-ball and the stroke should be played with running side. Should the red be taken appreciably thinner than half-ball it will run out of baulk. When the stroke

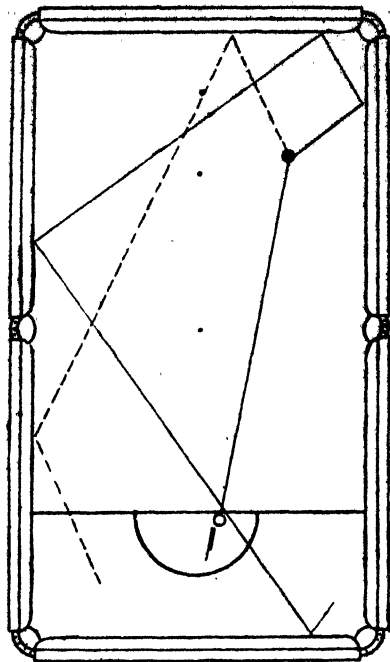


DIAGRAM 1020.—A double-baulk stroke from the D played with running side. Red ball 14 inches from the side cushion and $31\frac{1}{2}$ inches from the top cushion.

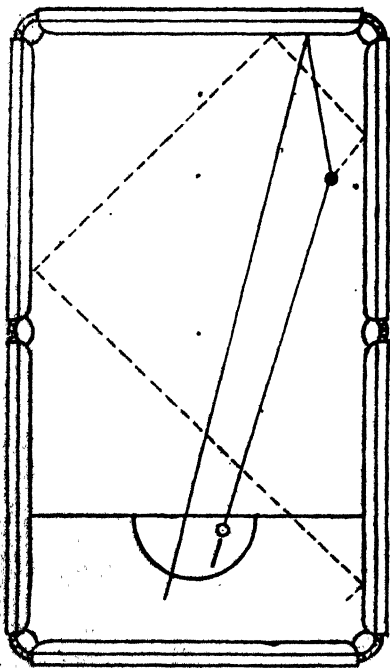


DIAGRAM 1021.—A double-baulk stroke from the D. Red ball 5 inches from the side cushion and 35 inches from the top cushion.

is correctly played the cue ball will sometimes enter the baulk pocket. When this happens the player follows the stroke with a miss in baulk, placing his ball in a commanding position for the next stroke in the event of his opponent failing to disturb either ball.

Diagram 1021 illustrates a variation of the position shown on Diagram 1020. Here, with the red so close to the cushion, an attempt at a double baulk by the same kind of stroke as the one illustrated on Diagram 1020 will result in failure, for when the stroke is played off the side cushion a kiss is only avoided when the red is taken very much thinner than half-ball and a contact of this nature cannot possibly cause the red ball to travel anywhere

this, therefore, good players get a

double baulk by means of a strong run-through. For this stroke a very fullish contact with the red is necessary and the cue ball should be struck well above the centre. When the stroke is correctly played the red ball travels round the table more or less as indicated by the intersected line on the diagram and the cue ball runs through the red to the top cushion with sufficient pace to rebound from this cushion into baulk. The stroke is a difficult one for all but good players. No side is required for it.

Diagram 1022 shows the red the same distance from the top cushion as before, but only about a ball's diameter from the side cushion. From this position a double baulk is quite on by exactly the same kind of stroke as the one illustrated on Diagram 1021, and very good players often play this stroke with the red situated more or less as shown on the diagram. With the ball so close to the cushion, however, the stroke is a very difficult one, firstly because a kiss can easily occur if the contact is not a very good one, and secondly if the cue ball takes the red too full—and a fullish contact is necessary for the success of the stroke

—it may catch the angles of the pocket instead of striking the top cushion some little distance from the pocket, as it does when the stroke is perfectly played. An alternative stroke is illustrated on the diagram. By playing a stab stroke the red ball can be driven round the table to the vicinity of the baulk pocket—as indicated by the intersected line. When the stroke is correctly played the cue ball will stop dead—or at the most run on but an inch or two—after its contact with the red, and will thus be placed in a safe position. In order, however, to cause the cue ball to stop dead it must be struck well below the centre and the stroke must be played with plenty of pace. Should the red be taken appreciably less than full the cue ball is bound to travel a considerable distance after its contact with the object ball, and in this way it may easily come to rest in position for an in-off from the D.

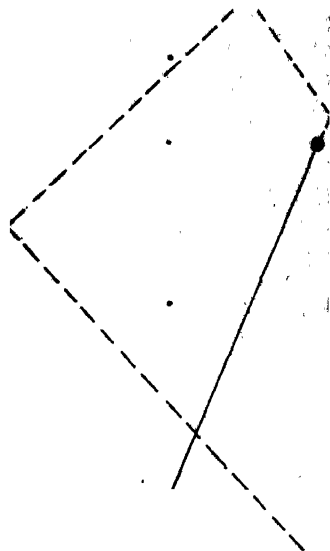


DIAGRAM 1022. — A single-baulk stroke from the D by means of a strong stab stroke. Red ball 2 inches from the side cushion and 35 inches from the top cushion.

CHAPTER XLV.

SAFETY PLAY.

Safety play is a most important branch of the game, and a good knowledge of the various kinds of strokes which are herein comprised is indispensable for good-class play. Many players never think of giving a miss nor of playing for safety during the course of a game even when they have a position of such a nature that they know that they have either no earthly chance of getting any played-for stroke or at best an exceedingly faint one. On the other hand, many players go to the other extreme, and afraid to go out for anything which is at all uncertain become confirmed cushion-crawlers. The one case is as bad as the other, for though a player is not playing a sound game when he goes out for a more or less impossible stroke he must constantly go out for strokes which although difficult are nevertheless reasonably on, else his big breaks will be few and far between.

Many players will only play for safety under certain conditions. For example let us suppose that two players, both capable of making an occasional 50 break, are playing a game of 200 up and the marking board shows 187—185. Under these conditions either of the players would very likely play for safety if faced with a position which presented nothing but a very difficult stroke, especially if the stroke were of such a nature that failure at it would almost inevitably result in a good leave for the opponent. But how seldom do we find a player with the score say 187—125 in his favour giving a safety miss however uninviting the position may be? He has a strong winning advantage and consequently considers it rather mean to play for safety, and therefore goes out for some big stroke, no matter what the odds may be against his getting it. True enough though he fails to score he may leave nothing for his opponent, and even if he should give him an opening the game is still in his favour owing to his big lead, for though his opponent may be capable of an occasional 50 break the odds are always greatly against his making one from the best of leaves. But if a player leading by 50 or 60 gives his opponent chances his advantage may soon disappear. Let the balls just run favourably two or three times for the player who is behind and the state of the game may very quickly change. The first opening enables him to score let us say 20 odd before he breaks down. The leader then goes on and perhaps just misses a stroke that was reasonably on. His opponent gets another opening, makes another 20 or so and one more favourable run of the balls enables him to change what seemed a certain win for one man into anybody's game. In no other game do players with a strong winning advantage give opponents chances. Bowlers at cricket do not send down loose balls just because their side has made a huge score. A golfer when he is four up and four to play does his best to win at the next hole. A chess player though he may be a piece or two to the good with a strong winning position does not needlessly sacrifice even a pawn. In billiards just as in any other game a player should try and win by as big a margin as possible, and when he holds a big advantage he is perfectly justified in doing all he can to maintain it. The players who never think of playing for safety no matter what the state of the game often lose after having held what ought to have been a winning lead, by reason of their opponents' safety tactics when

there is very little likelihood of their scoring. If, however, the player who holds a long lead refuses to open out the game when the balls run safe his opponent is compelled to take the risks, for should he play for safety he is met with the same kind of tactics.

When a player plays for safety by means of a miss he gains little if his miss is of such a nature that he himself is faced with a safe position should his opponent reply with a good miss, consequently, if the location of the balls allows of it, a good player when giving a miss always tries to place his ball in good position in relation to the red whilst at the same time giving his opponent nothing but a very difficult shot to go for.

Diagram 1023 illustrates this method of play very clearly. The red is on the

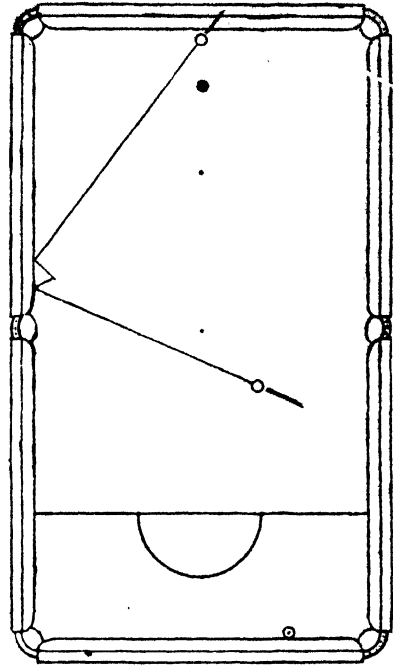


DIAGRAM 1023.—A safety miss—from two different positions—which places the cue ball in good position for an in-off from the red on the spot.

spot, the object white on the baulk cushion and the cue ball in two different positions. From either position any stroke is difficult and consequently a safety miss is sound play. By placing the cue ball a little above the centre pocket nothing but a difficult stroke will be left for the opponent, and yet he cannot give an answering miss without affording his adversary a good opportunity for a break off the red.

A game is generally commenced by a miss in baulk, but little or no advantage is gained by this miss for the usual answer is a miss under the side cushion, and provided that this miss is a good one the first player has nothing better to go for than a more or less uncertain cannon.

Diagram 1024 illustrates another answer to the usual miss in baulk. Let us suppose that the miss has been a



DIAGRAM 1024.—A reply to the opening miss in baulk—a variation of the usual reply.

very correct one, the ball having come to rest close to the centre of the D. If the second player sends his ball just past the centre spot a cannon from the resultant position will generally be a far more uncertain stroke than it is from the more usual miss under the side cushion.

Diagram 1025 shows an opening miss sometimes given by good players. When the ball comes to rest very close to the cushion as the result of a good stroke, any shot that the second player may elect to play for is an uncertain one, and yet if he also gives a miss the first player has an ordinary forcing in-off on. In order that the ball may be well placed for this in-off and at the same time badly placed for the second player as regards any cannon off it, it must be directed to a point on the cushion not more than about a foot from the centre pocket. The risk of



DIAGRAM 1025.—An opening miss sometimes given by good players.

this stroke is that unless the strength is so good that the ball comes to rest quite close to the cushion, position for a long jenny may easily be left for the second player and a careless stroke may even leave position for a centre-pocket jenny. When the ball is made to travel to a point on the cushion considerably nearer to baulk than as shown on the diagram a jenny will not be left for the second player, but in this case a cannon off the side cushion will not be a difficult shot, as being in hand the player can place his ball in a good position for the stroke. Or if he prefers he can give a safety miss, as the forcing in-off becomes an uncertain stroke when the cue ball is a long way below the pocket.

Diagram 1026 shows an awkward position at the top of the table. The pot is a very difficult shot for the position of the object white makes it impossible to get at the cue ball in the ordinary way and failure at the stroke

1026.—A safety miss which places the cue ball in good position for a pot.

is nearly certain to give the opponent a good opening. A safety miss in the manner indicated on the diagram is therefore very sound play, for by its means the cue ball is well placed in relation to the red, whilst the opponent with all three balls close to the cushion and in a line has to face a very uninviting position.

Diagram 1027 shows a location of the object balls which is typical of positions which constantly occur. The player is in hand with the red ball near a baulk pocket and the object white close to the side cushion. This position of the white may have resulted from a badly-played in-off or the position may have been set up by the opponent as the result of a well-played single-baulk stroke as illustrated on Diagram 1016 and also on Diagram 1019. Playing from the D with the object balls as shown on Diagram 1027 a cannon off

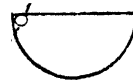


DIAGRAM 1027.—A safety miss from the D which prevents the opponent from playing at the red.

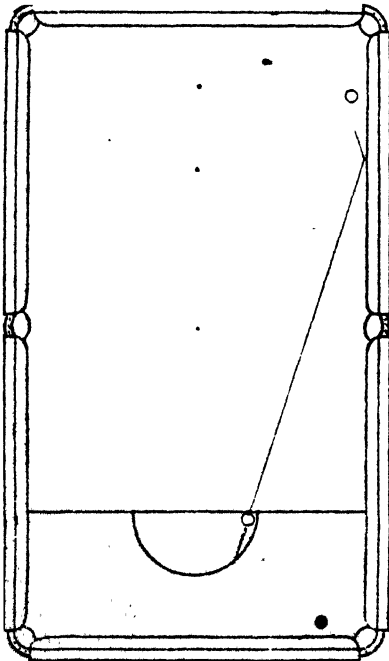


DIAGRAM 1028.—A safety miss from the D which covers the red for the opponent.

the white is quite a possible stroke, nor is it a difficult stroke at the hands of a good player, nevertheless it is never a certain stroke and the ordinary player is far more likely to miss it than to get it, and failure at it generally means a more or less good leave for the opponent. Instead of playing at the object white a very good safety miss may be given by putting the cue ball in a line with the object balls in the manner indicated on the diagram. This miss places the cue ball in very good position in relation to the red and at the same time makes it extremely difficult for the opponent to score. He is practically compelled to break up the position, and unless he can move the red by playing the white on to it—a difficult stroke—the giver of the miss will generally have a good for his next stroke.

Diagram 1028 illustrates a variation of the safety miss shown on Diagram 1027. Here a cannon off the white is a difficult stroke and failure at it is almost certain to result in a good leave for the opponent. By giving a miss in the manner indicated on the diagram the cue ball may be placed between the object white and the red. As the result of this miss the opponent cannot play at the red and thus he is at once placed at a disadvantage.

Diagram 1029 shows the red ball in baulk and one of the white balls exactly on the baulk line and in position for a simple in-off from the red. Most players when faced with this double baulk attempt to break up the in-off position by a stroke off the side cushion which will cause the cue ball to hit the object white. Such a stroke, however, is anything but an easy one, as the cue ball must hit the cushion at a point outside the baulk line and the amount of side has to be very nicely regulated indeed to cause it to rebound on to the object white. An infinitely better way for a player who is faced with this position to handicap his opponent is to place his ball just between the white and the red and in this way cover the

red. In order to do this he should place his ball on the D line within a sixteenth of an inch of the object white—taking great care not to touch the white in so doing and so make a foul—and then by the very gentlest of touches just send his ball out of baulk. When the stroke is so well played that the cue ball is not moved forward more than an eighth to a quarter of an inch the opponent will be faced with the position indicated on the diagram. A cover may still be left though the ball is sent forward half an inch or even an inch, provided that before being hit it has been placed very close to the object white, but in this case although the opponent cannot hit the red a cannon off the baulk cushion will not be a difficult stroke, whereas when the ball is placed only an eighth of an inch or so out of baulk a cannon off the baulk cushion is either an extremely difficult or an impossible stroke.

Diagram 1030 illustrates a variation of the safety tactics just described. Both the object balls are in baulk and so placed that in the ordinary way if the position is not disturbed by the player who is in hand an in-off is an easy enough stroke. A stroke to disturb the object white is not a very difficult shot as the ball is farther in baulk than in the position shown on Diagram 1029 and a cannon is even a possible result, but a player who in this position essays to hit the white is taking a big risk. Should he fail to hit either ball he leaves good position for his opponent, and even when he hits the white it is long odds against his getting a cannon, and when he fails to score the chances are that something

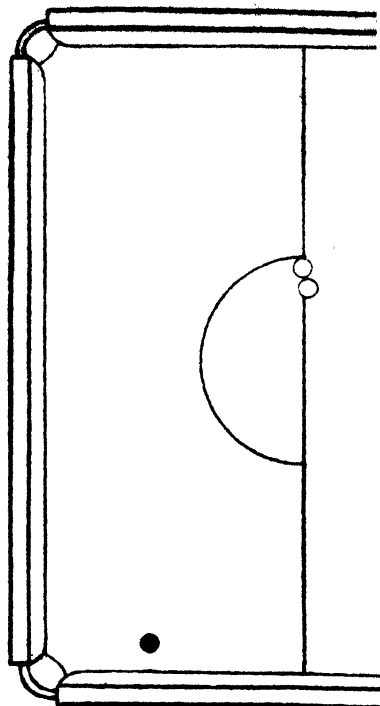


DIAGRAM 1029.—A miss out of baulk which prevents the opponent from playing at the red.

good will be left for the opponent. A far sounder game is to hamper the opponent. In this position he cannot place his ball between the object white and the red as is the case in the position illustrated on Diagram 1029, but he can place it *in front of* the white and quite close to it, in the manner indicated on the diagram. By doing so he prevents his opponent from getting at his ball without the use of the spider rest. With the spider the in-off becomes an exceedingly difficult shot, for even with this rest it is very difficult to avoid fouling the object white by reason of its being so near the cue ball. An attempt to score by this stroke generally results in failure in addition to a foul being made. Especially is this the case when the in-off cannot be made by a gentle stroke.

It not infrequently happens that as the result of some stroke by which a player has scored the object white lies on or quite close to the angle of a pocket and very near the brink, or it may be that the object ball is there by reason of his opponent's having just failed at some in-off which he has played. When a ball is well on the angle of a pocket it is angled to some portion of the table, that is to say it cannot be directed by a straight stroke to any point in this particular part of the table, and when a ball is badly angled the proscribed area of the table is a very large one. A good player always takes the utmost advantage of an angled object white. If the position allows of an in-off from this ball he may at once bring it away from the pocket, or if it presents no in-off but the position happens to be a good one for a break off the red he may confine his attention for the time being to this ball. If, however, the red offers nothing at all easy in the way of an in-off or an in-off of such a nature that although the stroke itself cannot be missed, further good in-off position cannot be gained with certainty, or if the red presents only a pot which though quite a simple stroke does not easily lead to further good position he plays to angle his opponent to *both* balls and at the same time to leave his own ball well situated in relation to the red.

Diagram 1031 illustrates this method of play. The object white is already badly angled as regards the red, and if the player instead of potting the red plays a gentle stroke on to it he can leave himself position for a simple in-off and at the same time cause his opponent to be angled to *both* balls. Generally speaking when a player is angled to both balls his best game is to give a safety miss—or even a three miss in order to leave his adversary only one ball to play at—but the average player under these conditions attempts to hit one of the balls

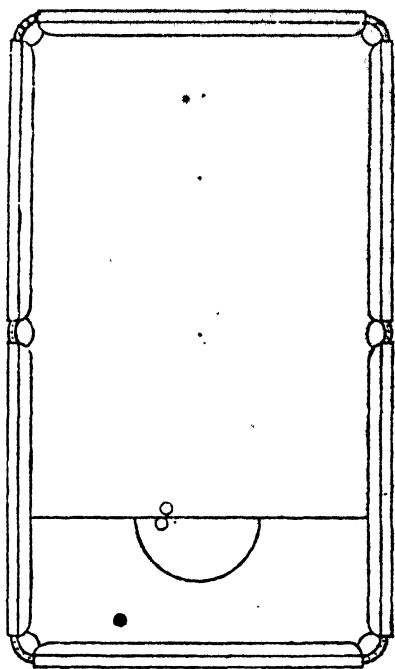


DIAGRAM 1030. — A miss out of baulk which prevents the opponent from playing at the red except with the spider rest, and which makes the in-off an extremely difficult if not an impossible stroke even with this rest.

by a stroke off a cushion, and when he fails to do so—and such a stroke is nearly always a very difficult one—the opponent's good position is materially improved by reason of his having the object white in play.

When a player is faced with a double baulk it is not always sound play to try and break up the position even though his opponent is very likely to score from it. When the balls in baulk are in position for an easy in-off it is generally the game to try and disturb the position, especially if it is not very difficult to hit the red or if a fair possibility of getting a cannon exists, but when safety play will leave the opponent nothing but a pot a miss should be given if the pot is of such a nature that good position in relation to the red on the spot cannot be gained by its means.

Diagram 1031 illustrates a double-

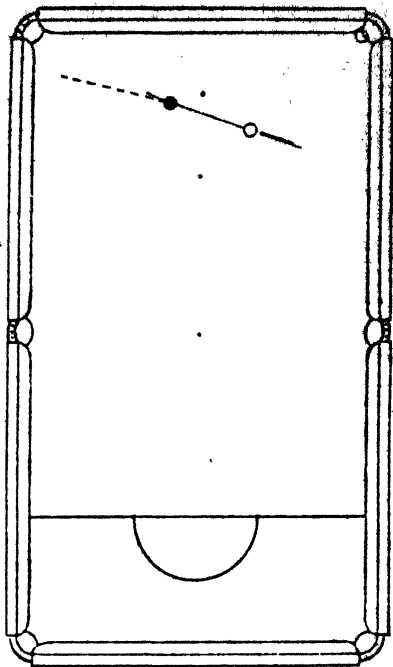


DIAGRAM 1031.—A stroke to leave position for an in-off and which also angles the opponent to both balls.

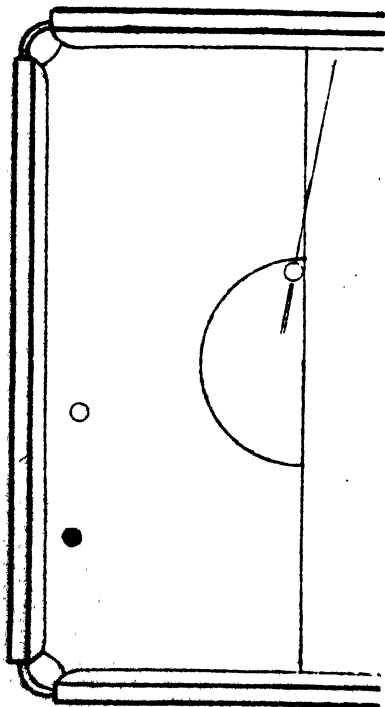


DIAGRAM 1032.—A safety miss from the D. The opponent is unlikely to obtain any good position from the pot.

baulk position which should be left alone. A miss on the side cushion will leave the opponent an easy enough stroke if he goes for the pot only, but in this case his after-position will be a very bad one, and if he plays a strong stroke to cross the table and in this way get some sort of position for a cannon off the white he may easily miss the pot, for owing to the pocket being blind the pot is a much more difficult stroke when high pace is used than it is at medium pace. Again, even when a high-pace stroke is successful as regards the pot the after-position may easily be very bad, for the run of the cue ball cannot be accurately gauged when a fast stroke is used, and when the miss out of baulk is as indicated on the diagram there is extremely little latitude as to where the cue ball may come to rest for like an easy cannon off the white. Even when the position in baulk affords a

possible six-shot it is often a good game to give a safety miss, for if the player goes for the six and only gets three his ball will remain somewhere near the pocket and consequently he will be faced with a very awkward position. Attempts to break up a double-baulk position of the nature of the one shown on Diagram 1032 more often than not improve the position for the other player, and this may still be the case even though one of the balls in baulk may be hit.

When a player only wants one for game a three miss will often ensure him a win. For example, if the red is on or close to the top cushion and the object white is at the baulk end of the table a three miss will leave his opponent a very safe position, for he will be compelled to play at the red and must either play for a double baulk—in many positions an exceedingly difficult stroke—or for safety—also a very difficult stroke with his adversary in hand. Even if a player wants two or three for game a three miss is often very sound play when his opponent wants 20 or so, for should his opponent answer with a miss he can retaliate with another three miss and eventually compel his adversary to play at the red.

CHAPTER XLVI.

SOME LITTLE-KNOWN STROKES.

Two things are essential for the making of good breaks at billiards, viz., a good knowledge of the game and the ability to make good use of what one knows. When a player is sufficiently advanced to make a forty or a fifty break fairly frequently and now and then a considerably bigger one, every new stroke which he learns is bound to assist him in some future break compilation and the knowledge of even one new stroke may conceivably enable him to make his first three-figure break. In this chapter, therefore, some strokes not generally known even by good amateurs will be illustrated and described.

Diagram 1033 shows an awkward placing of the balls. If with the balls to the exact measurements given under the diagram a cannon be played in the ordinary way by means of a thin check-side stroke, the stroke will almost certainly fail, for, except when the cue ball merely grazes the white, it will travel more or less as indicated by the continuous line on the diagram. Owing to the very acute angle at which the cue ball must strike the side cushion immediately after its contact with the object white, the check side has very little effect on the angle of rebound from this cushion and, consequently, the ball will very seldom cross the table sufficiently to allow of the cannon being made. A cannon off the side and top cushion is, however, quite a possible stroke and one well within the compass of any good amateur when it is played as a *strong thin screw*. It should be played with a little check side and with as much screw as is used for some big screw stroke. Played this way the cue ball strikes the side cushion—when the object ball is taken as thinly as is necessary for the making of the stroke—at practically the same spot as it does when no screw is used, but the effect of the screw or reverse rotation imparted to the cue ball is revealed in the altered path of the cue ball from the side cushion. In a well-played stroke the cue ball's line of travel is a curve, as indicated by the

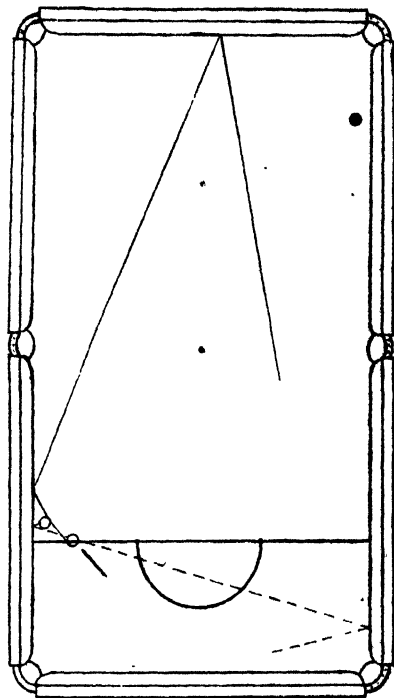


DIAGRAM 1033.—An awkward placing of the balls. An attempt to cannon by means of a thin check-side stroke off the white will generally give a result more or less as indicated by the continuous line on the diagram. Red ball 2 inches from the side cushion and 16 inches from the top cushion. Object white half an inch from the side cushion and $3\frac{1}{2}$ inches from the nearest point on the baulk cushion. Cue ball exactly on the baulk line and $6\frac{1}{2}$ inches from the side cushion.

SOME LITTLE-KNOWN STROKES.

continuous line on Diagram 1034. When extreme screw is used the cannon will often be made direct from the side cushion on to the second object ball as illustrated on Diagram 1035. When the stroke is made this way the cue ball's swerve is a very pronounced one.

Positions constantly occur from which an all-round cannon may be made off either side of the first object ball. For example, playing from the D with the object balls situated as shown on Diagram 1036 the cannon may be made off the right side of the object white, via the top and side cushions, or as indicated on the diagram, off the side, top and side cushions. With the second object ball in the vicinity of the baulk pocket this stroke is never a difficult one owing to the many slightly different ways in which it may be made, for when

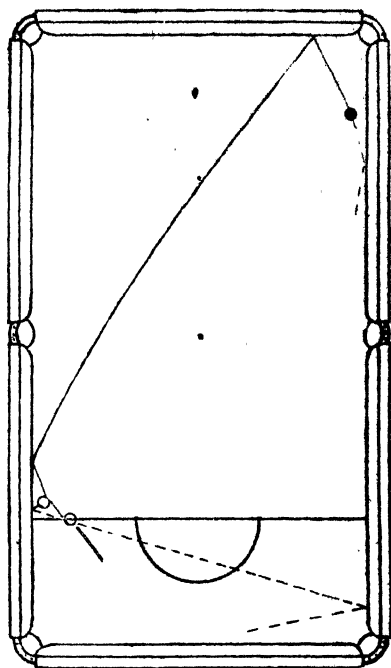


DIAGRAM 1034.—A cannon by means of a very thin stroke played with strong screw. The reverse rotation causes the cue ball to swerve after its rebound from the side cushion. Position of the balls exactly the same as on Diagram 1033.

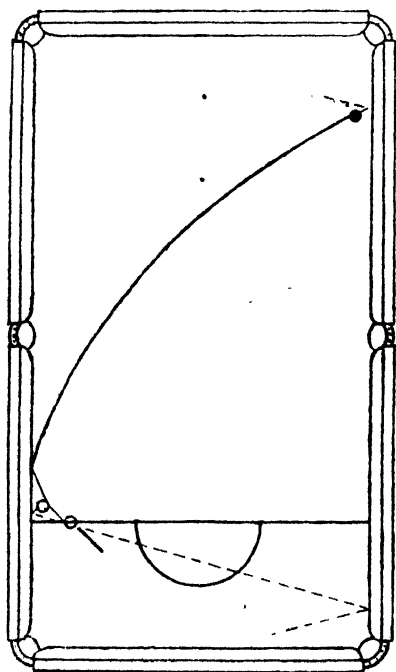


DIAGRAM 1035.—The very pronounced swerve which the cue ball may make when, in playing the stroke illustrated on Diagram 1034, extreme reverse rotation has been imparted to it.

the cue ball travels with anything like good direction it may cannon direct on to the second object ball, or the cannon may be made off the baulk cushion or off the baulk side cushion, and even off both these cushions—either being taken first—when the object ball is very near the pocket. Although players who are good enough for an occasional forty or fifty break know, and make use of both these methods of playing all-round cannons, the very ordinary player who but seldom gets into the twenties never thinks of playing a cannon in the manner shown on Diagram 1036, notwithstanding that it is, as a rule, no more difficult, and often much less difficult, than the cannon off the other side of the ball. This stroke off the side, top, and side cushions should,

however, only be played from the D when the object ball is not very near the cushion. When it is not more than 6 or 7 inches from the cushion a kiss is very likely to occur unless the contact is a thin one, and the nearer the ball is to the cushion the greater the difficulty of avoiding a kiss.

Although, as already stated, players who occasionally make a fifty break often play the stroke illustrated on Diagram 1036, very many of them are quite unaware of what may be termed hidden varieties of this stroke in which the cue ball takes the side, top and side cushions. Diagram 1037 illustrates one of these. To most players the position would appear a very uninviting one, but the cannon is anything but difficult, if a somewhat thinnish contact is made with

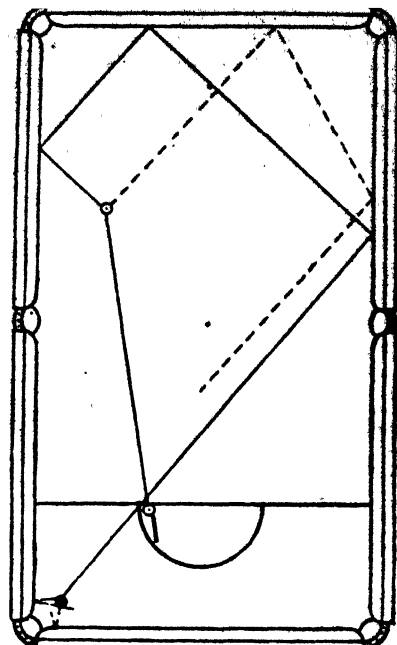


DIAGRAM 1036.—A running-side cannon off the side, top and side cushions. Object white 13 inches from the side cushion and 47 inches from the top cushion.

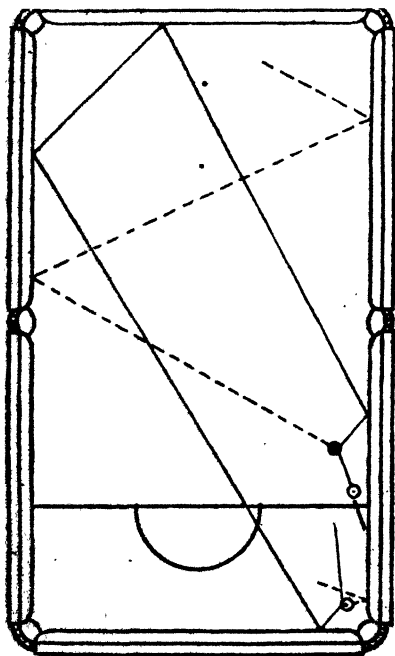


DIAGRAM 1037.—An all-round cannon running side. Red ball 4 inches side cushion and 37 inches from cushion. Cue ball 14 inches from cushion and 1 inch from the baulk line.

the red ball and plenty of running side and pace is used.

Diagram 1038 illustrates the stroke again. Here the contact should be about half-ball, and, as before, plenty of running side and pace are essential.

Diagram 1039 still further illustrates the possibilities of this running-side stroke off the side, top, and side cushions. In this position the contact with the red must be a very thin one in order that the cue ball may take the side cushion at a point not far from the pocket, otherwise it cannot travel round the table with correct direction for the cannon.

Diagram 1040 shows a position which often occurs. The player is in hand with the red ball in baulk close to a pocket and the object white is on, or near, the central line of the table but two or three inches too high up for ordinary centre-pocket in-off. A

pocket in-off is of course on, but top-pocket in-offs with the object ball so low down the table are never easy strokes, and, even when such a stroke is successful, the object ball often travels back to very nearly the same position, thus necessitating the playing of another difficult in-off. On the other hand, the playing of the bold stroke illustrated on the diagram may bring the red into play again and may even be the means of getting good position. For this cannon off the side, top, and side cushions, the cue ball should be placed well to the side of the D and the white should be taken thinner than half-ball, plenty of pace and running side being used for the stroke. By placing the cue ball considerably nearer the centre of the D this cannon may be

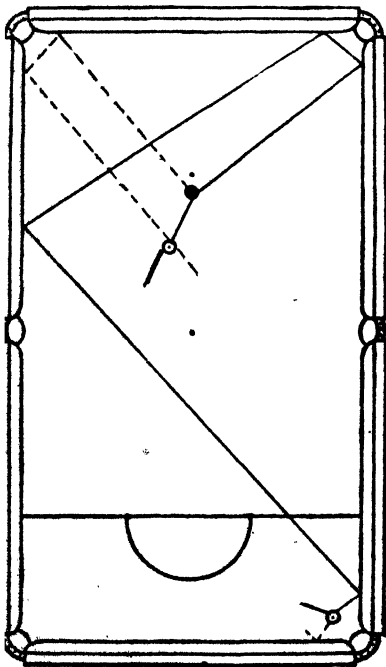


DIAGRAM 1039.—An all-round cannon played with running side. Red ball on the central line of the table and 22 inches from the top cushion. Cue ball 30 inches from the side cushion and 51 inches from the top cushion.

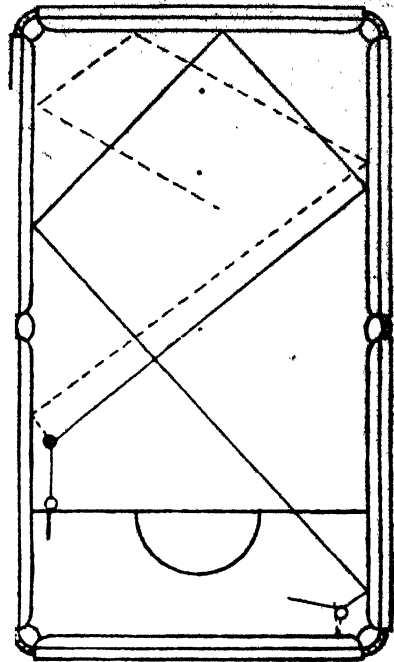


DIAGRAM 1038.—An all-round cannon played with running side. Cue ball close to the baulk line and 3 inches from the cushion. Red ball 3 inches from the cushion and about 12 inches from the cue ball.

made by means of a running-side half-ball stroke, but played this way there is a great danger of a kiss occurring which, of course, would be fatal, and in addition to this the pace which the half-ball contact imparts to the object white generally brings it into baulk.

In the strokes illustrated on Diagrams 1036, 1037, 1038, 1039 and 1040 the second object ball is in every case quite close to the corner pocket and it is because of the many ways in which these cannons off the top, side, and top cushions may be made when the second ball is in the vicinity of the pocket that good players so often score from these positions. A cannon by the same kind of play is, however, often quite possible—though naturally a much

some considerable distance pocket.

Diagram 1041 shows a position with the second object ball half a yard or so from the pocket. Here, if the cannon is played off the side, top, and side cushions, as illustrated on the diagram, the cue ball should be placed at the extreme end of the D and a fast running-side stroke must be used in combination with quite a thinnish contact with the object ball. In this way the cue ball is made to take the second side cushion quite low down, and thus from this cushion its line of travel is to a point on the baulk cushion quite a long way from the pocket.

Diagram 1042 illustrates a variation of the stroke shown on Diagram 1041. Here, the ball in baulk is again a con-

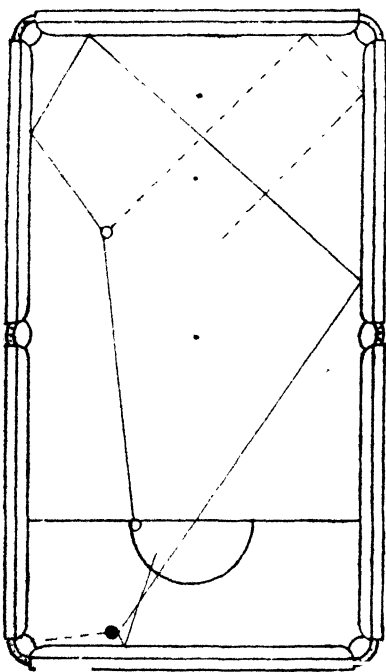


DIAGRAM 1041.—A cannon off the side, top, and side cushions. The stroke should be played with plenty of running side and the contact with the object white must be a thin one. Object white 13 inches from the side cushion and 47 inches from the top cushion. Red ball near the baulk cushion and about 18 inches from the side cushion.

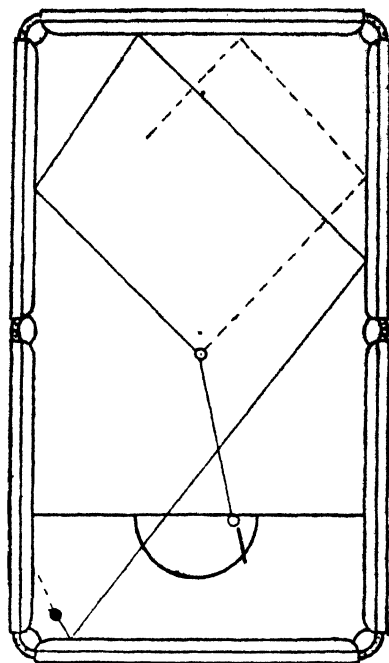


DIAGRAM 1040.—A cannon off the side, top, and side cushions played with running side. Object white on, or close to the central line of the table and just too high up for a centre pocket in-off.

siderable distance from the pocket but close to the side cushion instead of the baulk cushion. In order, therefore, that the cue ball may travel across the table with correct direction for the cannon it must be made to take the second side cushion at a point very much higher up the table than in the previous stroke. The desired effect is best attained by means of a plain half-ball stroke or a half-ball with just a little running side. In many of these strokes a slight alteration of the cue ball's position on the D line or a slightly incorrect contact with the object ball results in a fatal kiss, but in the stroke illustrated on Diagram 1042 anything like correct contact prevents any likelihood of this kiss taking place. This cannon can also be made by spotting somewhere near the centre of the D line

and taking the object ball thinner than half-ball with a running-side stroke, but played this way a kiss may easily occur. In the positions shown on Diagrams 1041 and 1042 the cannon can, of course, also be played off the right side of the white, but when played this way variations of contact and in the amount of side used influence the cue ball's line of travel to a considerably greater extent than is the case when the cannon is played off the left side of the ball. In the position shown on Diagram 1042 a cannon off the right side of the object white is by no means a difficult stroke for any good player, but with the second object ball as shown on Diagram 1041 a cannon off the right

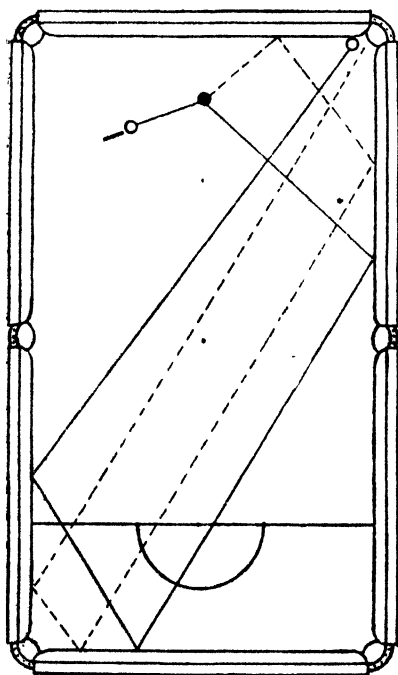


DIAGRAM 1043.—An all-round cannon, which requires very high pace in addition to running side and screw. A perfect stroke bunches the balls close to the top pocket. Red ball on the spot. Object white touches the top cushion and quite close to the side of the pocket. Cue ball about 25 inches from the baulk cushion.

line with it and the object white.

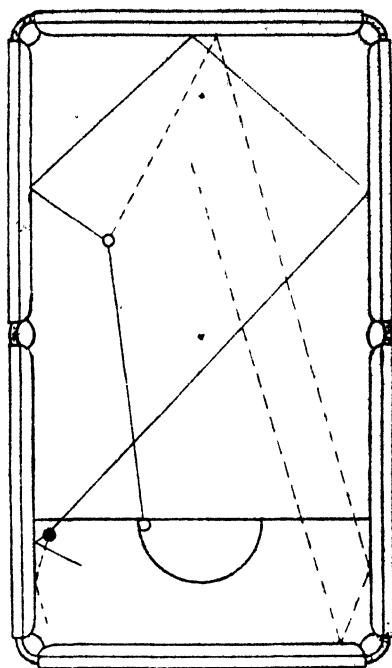


DIAGRAM 1042.—A cannon off the side, top, and side cushions. The stroke should be played without side and the object white should be taken about half ball. Plenty of pace is necessary. Position of the object white exactly the same as on Diagram 1041. Red ball near the side cushion and about 25 inches from the baulk cushion.

side of the white is anything but an easy stroke.

Diagram 1043 shows a most uninviting position. The three balls are in a straight line, with the red on the spot, but the pot is not on owing to the entrance to the pocket being blocked by the object white. A number of shots are quite possible from this position, and if a player plays a run-through stroke a dozen times, taking the red very full each time he will in all probability score a few times. The object white may enter the pocket, the red may run through the white into the pocket, the cue ball may enter the pocket after a kiss, or a kiss cannon may occur,

of these strokes is, however, too difficult a stroke to play for, thus a score by means of a run-through is generally a fluke in the sense that it is accidental. On the other hand, as the position is such that quite a number of different flukes are on as the result of a run-through stroke, it is often worth while to play this run-through on the chance of one of these possible strokes coming off. The stroke that a very good player plays for, however, is the all-round cannon shown on the diagram. This cannon is a difficult one in that it must be played with running side and screw at very high pace and the contact with the red must be pretty accurate. The cue ball, after striking the side cushion, must take the baulk cushion before the opposite side cushion, otherwise it will not travel up the table again, and it can only take the baulk cushion first if in addition to the stroke being played with plenty of screw and side a fullish contact is made with the red. When the contact with the red is a very good one

in the manner indicated on the diagram and a perfect stroke will result in the balls being bunched quite close to the pocket. When the cannon just fails to come off the cue ball will sometimes enter the pocket. When the table is at all slow the stroke is still more difficult owing to the difficulty of making the cue ball travel the necessary distance. Even on a very fast table high speed is required in order that the cue ball may reach the object white.

Diagram 1044 shows another uninviting position, the three balls being in a straight line again. A possible stroke here is a cannon off the side and top cushion. Another is the cannon illustrated on the diagram, in which the cue ball travels all round the table and then up again to the red. For this cannon the object white must be taken considerably thinner than half-ball and the stroke must be played with running side and with very high pace, in fact, with all the pace at the player's command. On very slow tables this stroke is practically impossible, as the cue ball cannot be made to travel the necessary distance, and even on a medium-pace table failure may easily result from the same reason.

The stroke illustrated on Diagrams 1043 and 1044 are slightly different on different tables owing to the variation in the angle of rebound from cushions of different make when very high pace is used, and consequently either of these strokes played in exactly the same way as regards pace, contact, amount of side and screw—assuming this to be possible—on two tables might give results, nevertheless both of them are quite on on any fast table quite of the make of the cushions.

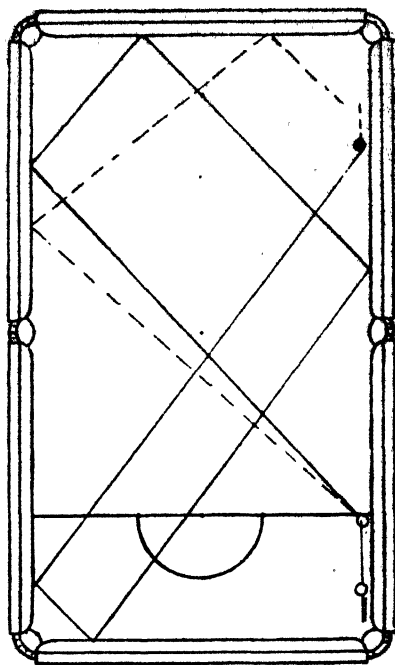


DIAGRAM 1044.—An all-round cannon, which requires tremendous pace. Red ball 1 inch from the cushion and a few inches higher up the table than the pyramid spot. Object white close to the baulk line and 1 inch from the cushion. Cue ball about 12 or 15 inches from the object white and in a dead straight line with it and the red.

Diagram 1045 illustrates a position which, as regards the stroke to be played, is typical of positions which not infrequently occur. Looking at the diagram, an in-off from the white or a screw cannon may not appear to be a difficult stroke, but if the position be set up on the table according to the measurements given under the diagram it will be found that the in-off is a thinner than half-ball stroke and consequently a most uncertain one with the cue ball so far from the object ball, and that a ball-to-ball screw cannon is quite beyond any player who is not possessed of exceptional cue power. The pretty stroke which is illustrated on the dia-

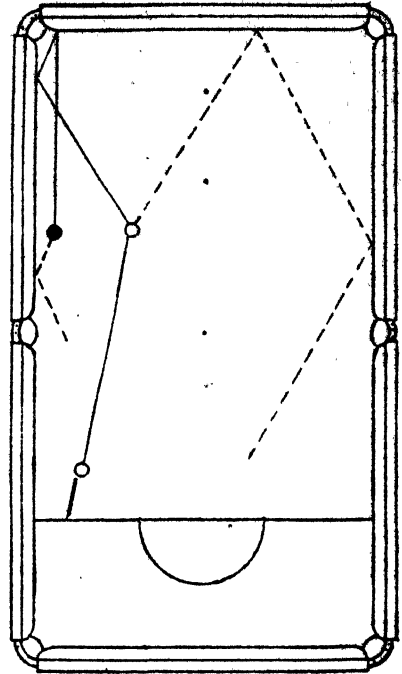


DIAGRAM 1045.—A check-side two-cushion cannon. Red ball 3 inches from the side cushion and 47 inches from the top cushion. Object white 18 inches from the side cushion and 47 inches from the top cushion. Cue ball 6½ inches from the side cushion and 38 inches from the baulk cushion.

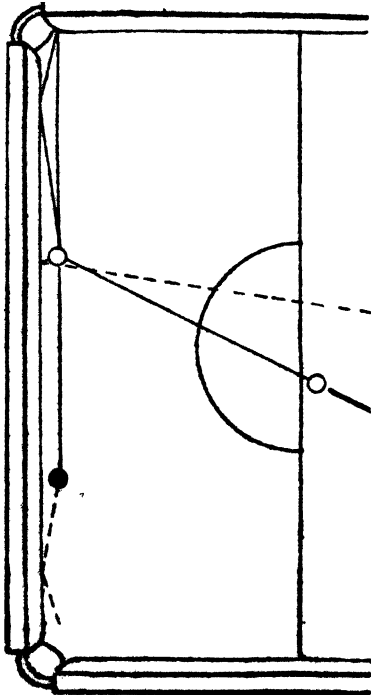


DIAGRAM 1046.—A pretty, if somewhat uncertain cannon. Object white half an inch from the baulk cushion and about 24 inches from the side cushion. Red ball 1 inch from the baulk cushion and about 20 inches from the side cushion. Cue ball close to the D line and about 31 inches from the side cushion.

gram is, on the other hand, quite within the compass of any fair player. All that is necessary for a cannon—in this particular position—is a fairly fast, slightly fuller than half-ball stroke, played with plenty of left side. Many players call this side running side, but though it is running side off the object ball, left side is here check side off the side cushion and also off the top cushion, and consequently the stroke is best described as a check-side two-cushion cannon. Sometimes, as the result of a successful stroke the red ball may be placed close to the pocket.

Diagram 1046 shows an placing of the balls. An in-off from the of

cushion, is, of course, a possible stroke, but it is hardly worth going for with the red in baulk. A screw cannon from the white to the red is another possible stroke, but, though good position may be obtained by its means, such a stroke is quite beyond any player who is not exceedingly good at screws. A third stroke is the one illustrated on the diagram. This cannon is a half-ball stroke played with plenty of top and pace. In order that this stroke may come off, the cue ball must take the baulk cushion some little distance from the pocket, rebound from this cushion on to the angle of the side cushion and thence straight across the table to the red. When the stroke is successful good position generally results from it by reason of the red ball being sent to the pocket. This stroke, however,

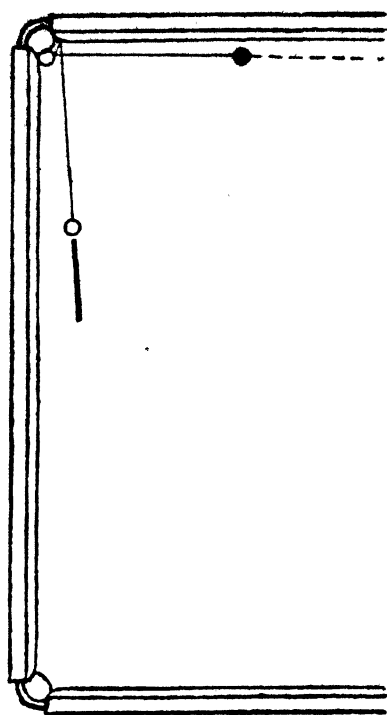


DIAGRAM 1047.—A cannon by hitting the cushion before the ball. Object white on the near angle of the pocket. The stroke is more difficult on a table with large pockets than it is on a standard table.

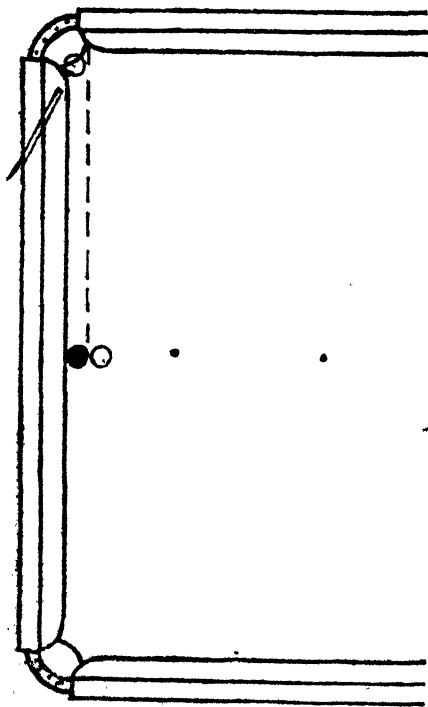


DIAGRAM 1048.—A cannon off the angle of a corner pocket. Cue ball angled to both

varies very greatly on different tables, owing to the difference in the size and cut of different pockets. So much so is this the case that a player who can get this cannon time after time on a table to which he is accustomed, might, on another table, have to try it quite a number of times before he was successful. Generally speaking, the smaller the pocket the less difficult does the stroke become.

Diagram 1047 shows another awkward placing of the balls, and also illustrates a cannon made by hitting the side cushion before the object white, and in this way saving the white. This stroke also differs very greatly on different tables, and, whereas on one table it may present very little difficulty indeed, on

Diagram 1048 illustrates a very awkward-looking position of the balls which, with variations which do not affect the stroke to be played, may sometimes occur. Here, as the cue ball is angled to both balls, most players would give a miss, and of course this is a safe game to play. A cannon is, however, by no means a difficult if somewhat uncertain stroke, and is made by playing the cue ball on to the side cushion angle, from which it rebounds across the table. The angle has not been taken at any very exact spot in order for the stroke to be made, but it must not be taken very far in, otherwise the ball will rebound from one angle to the other and the stroke will fail. Although the cut of pockets often varies very much this cannon is easily on on any table, and when once the right place to aim at is found the stroke can be made a dozen times consecutively. When the strength is nicely judged a successful stroke bunches the balls.

CHAPTER XLVII.

TRANSMITTED SIDE AND CUSHION-IMPARTED SIDE.

In the chapter on SIDE the questions of transmitted side and cushion-imparted side were gone into at some length, but owing to the discussion which afterwards took place on these interesting points a further analysis of them may be of interest to very many players.

Ever since the properties of side were known players have been divided on the question as to whether the cue ball can or cannot impart side to an object ball. If a poll were taken to-day it would possibly show that a large majority of players not only believe that the cue ball *can* transmit side to an object ball, but that enough can be imparted to it to very materially alter its normal angle of rebound from a cushion. In the course of this chapter I will, however, endeavour to demonstrate that although the cue ball may communicate side to an object ball, the amount communicated even under the most favourable conditions must always be exceedingly small, and that consequently transmitted side has no bearing whatever on the playing of the game and may therefore for all practical purposes be considered as non-existent.

In order to impart side to the cue ball the ball must be hit near the edge, or at least a slight distance from the centre. When the cue ball is hit quite truly at the centre no side is imparted to it. About this there can, of course, be no question. Now when an object ball is hit by the cue ball no matter whether it is taken very thinly indeed, or quarter-ball, half-ball, three-quarter-ball, full-ball, etc., it always travels in a line which is a continuation of the line passing through the centres of the two balls at the moment of contact. About this there can also be no question. It consequently clearly follows that an object ball must always be hit dead in the centre in relation to its line of travel. Theoretically the point of contact between the balls is position without area, but in all strokes played with plenty of pace compression takes place at the point of contact, and consequently instead of the balls touching each other at the moment of contact at a mathematical point only, they touch each other over a certain area—how relatively large this area may be in extremely fast strokes is shown by the red disc which occasionally appears on an ivory ball as the result of a strong contact with the red ball. Notwithstanding this compression which takes place in strong strokes the object ball is still hit on a very small part of its surface and at its exact centre in relation to the line of travel which the cue ball gives it. Also, the balls are in contact with each other for only the minutest fraction of a second, and consequently if a strongly rotating cue ball imparts any rotation to an object ball it can only be by what may be termed a rotatory rub against an exceedingly small portion of its surface for an infinitesimal fraction of time. This being so it seems logical enough to contend that if this rotatory rub against a very small surface of the object ball for a minute fraction of a second may impart rotation to the object ball the amount of such rotation must be exceedingly small.

So much for theory. Let us now make some actual experiments at the table. Place a ball on the D line and attach a piece of paper—stamp paper will do very well—near as possible to its centre in such a way that it will project directly up the table. Diagram 1049 shows the ball

placed. If a player now stands at the table, just as though he were going to give the ordinary miss in baulk, and causes the ball to travel on the baulk line all the way to the cushion he will find that when he hits the ball truly at the centre the piece of paper points straight up the table all the time the ball is travelling. This is, of course, because the ball rolls forward without any spin. If after playing the stroke without side he plays it with plenty of side he will find that the piece of paper no longer points up the table as the ball travels to the cushion but instead rotates in a circle. If he then plays the stroke with only a little side he will find that the paper will still rotate, though not with the same speed, the difference, of course, being

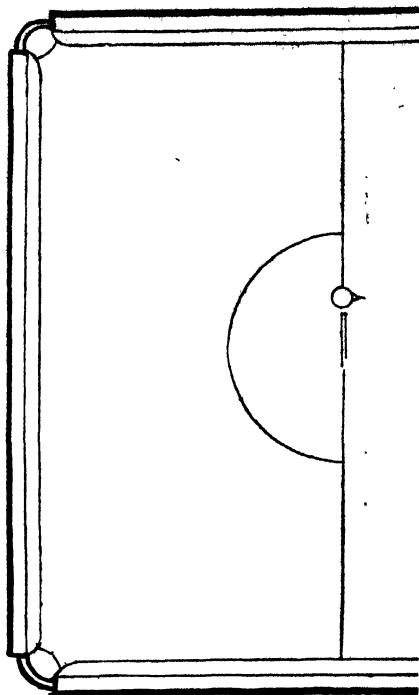


DIAGRAM 1049.—A ball with a paper attachment—to render rotation more easily visible.

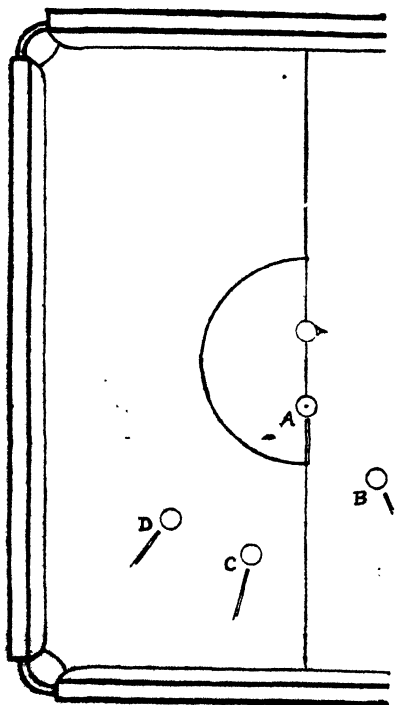


DIAGRAM 1050.—Test strokes for transmitted side. Causing the object ball to travel along the D line. Cue ball in various positions.

due to the smaller amount of spin imparted to the ball, and the player will find that some rotation will be given to the paper even though the ball is struck very slightly away from the centre. Let the player now place another ball—let it be called ball A—on the baulk line at some distance behind the ball which has the paper attachment and then with this ball A play full on to the other ball—as shown on Diagram 1050—striking ball A with plenty of side. If ball A transmits side to the object ball the paper is bound to rotate—quickly if much side is transmitted to the ball, slowly if a small but still very appreciable amount is transmitted to it. The player will find, however, that whether he plays the stroke quite gently or with plenty of pace no rotation of the paper attachment can be detected, and if instead of playing from A he plays from

B, C, or D the paper will always point to the top cushion provided that contact with the object ball is such as to cause it to travel along or very -- along the baulk line, and thus conclusive evidence is afforded that in strokes the cue ball either communicates no spin at all to the object ball or that the amount communicated is so very small that it cannot be detected by any visible rotation of the ball.

Let us now place the object ball and the cue ball on the baulk line only 5 or 6 inches apart, as shown on Diagram 1051, the paper attachment on the object ball pointing as before to the top cushion.

If we now play a strong stab or screw-back stroke, taking the object ball so full in the face that it travels exactly on the baulk line, we will find that strong right side on the cue ball causes the object ball to rebound into baulk after travelling along the line and strong left side causes it to rebound out of baulk. Indeed, a very strong stroke with right side will cause the object ball to rebound into baulk even though it is made to strike the cushion at a point quite half an inch out of baulk, and in the same way, playing with left side the object ball may be made to rebound out of baulk after striking the side cushion at a point half an inch or so inside the line. This experiment, of course, conclusively demonstrates that under certain conditions side can undoubtedly be transmitted to the object ball. Unless, however, the cue ball is fairly close to the object ball and a fast stroke is used, the amount of side which the cue ball—in a stroke played with side—transmits to the object ball is always so extremely infinitesimal that for all practical purposes communicated side in such strokes may be considered as non-existent. Indeed, notwithstanding that the transmission of side may be clearly demonstrated by the stroke illustrated on Diagram 1051, the amount transmitted under the most favourable conditions is really extremely small, but as in this stroke the object ball takes the cushion at a right angle, or what is practically a right angle, even a very small amount of side causes an alteration from the normal angle of rebound. How little side is necessary to prevent a ball coming straight back from a cushion after hitting it full in the face may be easily proved by placing a ball on the D line and trying to make it rebound from the cushion *exactly* on the line, or by placing a ball on the centre of the D line and attempting to send it *exactly* up and down the central line of the table. An amount of side slight enough to give the ball no more than a quarter of a turn will prevent the ball from returning on the line of its outward travel. By means of an experiment presently to be described it may be proved that even under the most favourable conditions the amount of rotation—which of course is really what side is—transmitted or imparted by the cue ball to the object ball can never be as much as a quarter of a turn and is perhaps seldom more than an eighth of a turn. It might at first be thought that so slight an amount could



DIAGRAM 1051.—A test stroke to prove that a very small amount of side may be transmitted to the object ball.

hardly affect the angle of rebound from a cushion owing to exhaustion taking place before the cushion is reached, but it must be remembered that as a very strong stroke has to be used in order that the object ball may be given a slight rotation, this ball travels to the cushion with very high speed, also that as the amount of rotation is very slight the rotatory movement must naturally be a slow one, and that consequently the cushion is reached before rotation has ceased. If instead of the balls being placed as on Diagram 1051 they are so placed that a full contact causes the object ball to strike the cushion at an angle which differs sensibly from a right angle the very small amount of rotation that may be imparted to the object ball under the most favourable conditions cannot be detected, for should the cushion be struck at an acute angle quite a strong spin on the ball would be necessary to cause a visible alteration from the normal angle of rebound, and should the cushion be struck rather squarely or even at an angle of 45° the effect of high speed would cause the angle of rebound to be sensibly different from that of incidence, for, as is well known by all good players, when a ball travelling with great speed strikes a cushion pretty squarely it presses itself into the cushion, to a greater or less extent according to the resiliency of the cushion, and the farther it gets into the cushion the more does the angle of reflection differ from the angle of incidence.

In the stroke illustrated on Diagram 1051 it might be thought that even the small amount of rotation which may be imparted to the object ball by means of a strong stroke played with side could be detected by means of the paper attachment on the object ball. This is, however, not the case. If a ball travelling with side rotated round a vertical axis, a very slight turn could be easily detected. A moment's consideration will, however, convince anyone that rotation round a vertical axis whilst a ball is travelling forward must be impossible unless the ball slides along the table, and the action of a ball as it travels is a rolling and not a sliding one.* When a fast-travelling ball rotates with side the movement of the ball is a compromise between rolling forward round a horizontal axis and rotating round a vertical axis. This movement of the ball can easily be seen by placing a ball with a paper attachment on the D line in such a manner that the paper points either to the right or the left, and playing a stroke up the table with side. If plenty of side is used in combination with a fast stroke the rotation of the paper from side to side will be plainly seen, and this experiment will also afford visible proof of the fact that the direction of rotation is diagonal to the line on which the ball travels forward.

It is because of the rotation which is called side being diagonal to the forward translation of the ball that the very small amount of side which under the most favourable conditions can be imparted by the cue ball to an object ball cannot be very easily detected by means of a paper attachment on the object ball. By means of another experiment we can, however, not only

* The cue ball in exceptional circumstances may sometimes be seen to rotate rapidly round a vertical axis whilst travelling slowly forward in apparently a straight line. Many players will remember having occasionally seen the spot ball travelling along the table with the visible spot right at the top of the ball, the forward movement causing no alteration in position of the spot. This occurrence may now and then be seen after playing a strong very full run-through with plenty of side in such a manner that the cue ball travels only a short distance after contact. In this case the strength of the stroke has imparted strong rotation to the cue ball, but its contact with the object ball has almost destroyed its forward movement, and consequently its rotation becomes paramount. Although apparently travelling forward in a straight line, in reality it travels along a line which is an extremely fine spiral, just in the same manner that a spinning top travels on a pavement. It is the accident of the spot happening to be at the apex which causes this rotation round a vertical axis to be occasionally noticed. It is perhaps needless to add that the object ball can never rotate in this

conclusively prove that it is possible for the cue ball to impart a minute amount of side to an object ball, but we can also give visible proof of this, and even measure the amount of turn or rotation which is given.

For this experiment we require a ball half white and half black, and any old ball painted with Indian ink will answer our purpose very well, but the more accurately it is divided into halves and the sharper the line of division the better for the success of the experiment. If this black and white ball be placed on the centre of the D line and the cue ball be placed right behind it, as shown on Diagram 1052, it will be found that provided the cue ball be struck at or quite close to the centre, a full contact will cause the object ball to travel up the table without any mingling of the black and white, and the black half and the white half of the ball will stand out absolutely distinct from each other no matter whether the stroke is played with medium pace or with very high pace, provided always that the ball is made to travel straight up the table and not to either side of the central line. If a very strong stroke with plenty of side be now used—a screw or stab is best for the purpose—it will be found that the black and white halves of the ball no longer stand out distinct as it travels up the table, and if the ball has been so truly hit that it travels over the central line of the table conclusive evidence is afforded that *some* rotation must have been imparted to it to have caused any mingling of the black and white. Only a very slight amount of rotation has, however, to be given this ball in order to cause this mingling of the black and white. If before the stroke were played the black and white ball were turned a quarter way round with the hand, the dividing line instead of being up and down the table would be across it, and if the ball in this position were sent straight up the table at a high speed its colour would appear a mixture of black and white. It is not necessary for the ball to be given anything like a quarter of a turn as the result of a strong stab or screw played with side in order that a considerable mingling of the black and white may take place, for an eighth of a turn or even less will effectually destroy the line of division and at the same time clearly demonstrate that the cue ball has imparted a small amount of rotation to the object ball. It is far from easy to prove what is the greatest amount of rotation which can be imparted to an object ball by the cue ball, but as the result of this experiment repeatedly made it would seem that it is never as much as a quarter of a turn and is seldom more than an eighth. By means of this experiment it can, however, be shown that even quite a slow stroke played with side gives the object ball a minute amount of turn. Unless, however, a strong stroke is used side imparted to the object ball has absolutely no effect on the angle of rebound even when the cushion is struck at a right angle. This is because the very small amount of rotation which a slow stroke played with side imparts to the object ball is almost at once exhausted.

If, however, the amount of side which can be imparted to an object ball by

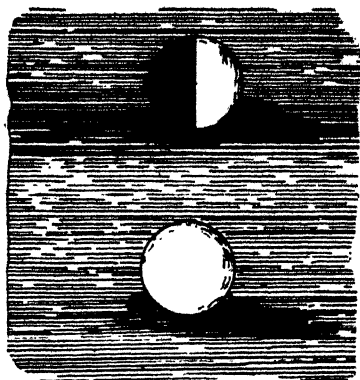


DIAGRAM 1052.—A black and white object ball correctly placed with the cue ball behind it for an experimental stroke to prove the transmission of side.

the cue ball, even under the most favourable circumstances, is so small as to render it a negligible quantity as far as the playing of the game is concerned the same cannot be said of cushion-imparted side, which is side imparted to the cue ball or an object ball as the result of a strong contact with a cushion at certain angles. Whenever a ball strikes a cushion with considerable force and at an angle which is not very acute, it presses itself into the cushion to an extent which depends upon the resiliency of the cushion, the angle at which it is struck and the speed with which the ball travels to it. When a ball presses

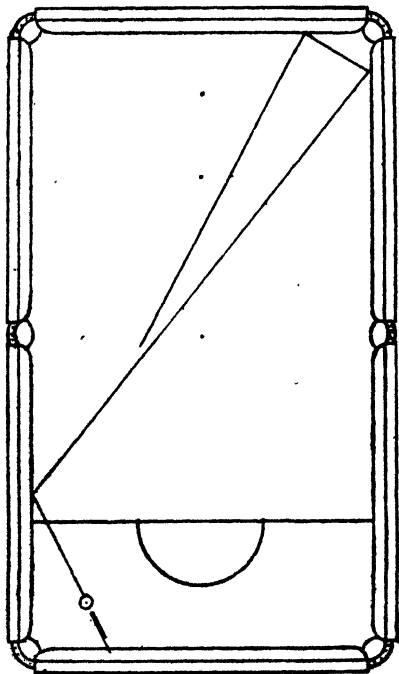


DIAGRAM 1054.—A stroke in which the cue ball though struck with all the strength possible travels a comparatively short distance. The first cushion is struck at the same angle as in the stroke shown on Diagram 1053, but the cushion-imparted side becomes check side off the second cushion by reason of the ball travelling direct from one side cushion to another.

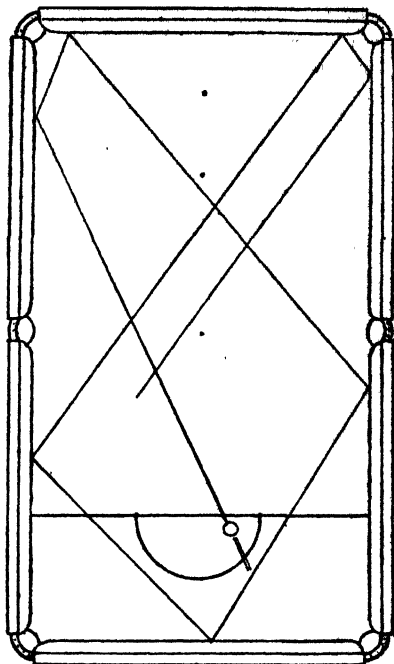


DIAGRAM 1053.—A stroke played with all the strength possible to cause the cue ball to strike seven cushions (the top cushion being struck twice). Even when the stroke is played without side the ball travels round the table with running side, as cushion-imparted side is running side when the ball travels in the manner indicated.

itself into a cushion it is thrown off with a twist—the sole exception to this rule being in the case of a right angle contact—and this twist is always in the direction in which the ball is travelling, consequently the rotation which this cushion-given twist imparts to the ball is always running side.

When a billiard table maker is selling a table he is generally desirous of demonstrating to his customer how fast his cushions are, and in order to do this plays the stroke illustrated on Diagram 1053. Unless the cushions are very dead—and new cushions are generally pretty fast even though of such a quality that they may become quite slow in two or three years—a ball may be made to strike seven cushions in the

manner indicated on the diagram when the stroke is played with all the speed command ; nor, in order to get this effect, is it necessary to hit the ball with any side. In giving this proof of the speed of his cushions the manufacturer is—probably quite unconsciously—making use of a stroke in which the running side which a cushion imparts to a fast ball is of considerable assistance as regards the length of its travel. If instead he played the stroke illustrated on Diagram 1054 he would most likely be startled to notice how much shorter a distance the ball travels than is the case with the stroke illustrated on Diagram 1053. It will be noticed that the line of aim is at exactly the same angle to the side cushion in both diagrams, consequently provided that both strokes are played with equal strength the speed with which the ball rebounds from this cushion must be practically the same in both cases. How is it then that the ball travels a much greater distance in the stroke illustrated on Diagram 1053 than it does in the one shown on Diagram 1054? The answer is because the strong contact with the first cushion imparts a good deal of running side to the ball, and whereas in the former stroke this running side while it lasts is running side off every cushion which the ball strikes, in the latter it is check side when the second cushion is struck. The spin on the ball is, of course, the same in both strokes, but if on Diagram 1053 the tendency of the spin is to carry the ball towards baulk, the tendency of the spin must also be to carry it towards baulk when in the stroke shown on Diagram 1054 the ball strikes the second side cushion. As, however, in this stroke the ball is travelling up the table previous to its contact with this cushion, no amount of side could possibly take it down the table, nevertheless the tendency to do so is there and consequently the side is check side off this cushion, with the result that the speed of the ball is greatly checked. If this strong stroke be played with running side the check to the speed of the ball—provided always that it travels direct from one side cushion to the other—will be still more apparent.

The running side which a cushion imparts to a ball in strong strokes often causes an object ball to remain in baulk by reason of this running side becoming check side off the second cushion struck by the ball. Diagram 1055 is illustrative of a commonly-occurring position. Here, a strong screw stroke, whether played with check side or running side or without side at all, causes to be imparted to the object ball by reason of its being pressed into

If the cue ball's contact with it is sufficiently full to cause it to

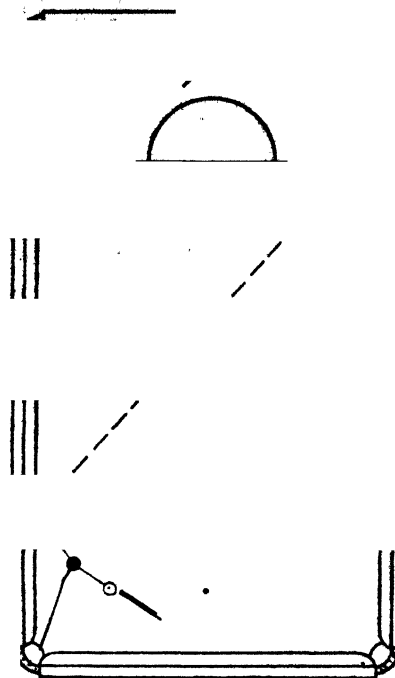


DIAGRAM 1055—A screw in-off which leaves the red in baulk when the side cushion is taken before the baulk cushion. Cushion-imparted side becomes check side when the red travels across the table from one side cushion to the other.

rebound from one side cushion to the other, as shown on Diagram 1055, the running side becomes check side off the second cushion and consequently the ball can hardly come out of baulk, especially is this the case when it strikes the baulk side cushion at any considerable distance from the pocket, for this necessitates its travelling a long way through baulk before it can cross the line a second time. Even on a very fast table the object ball will seldom finish out of baulk when it travels direct from one side cushion to

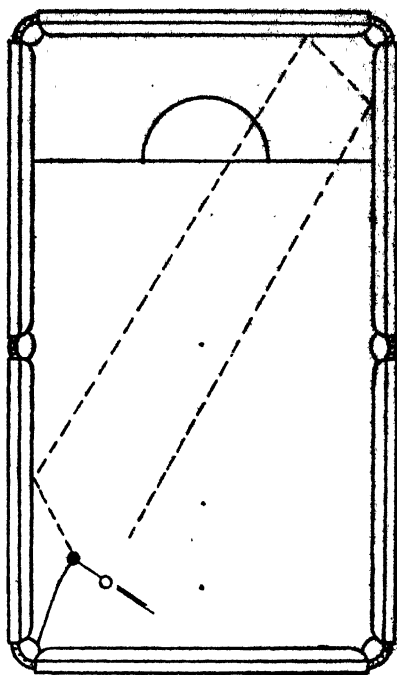


DIAGRAM 1056.—A screw in-off which keeps the red ball in the field of play when the baulk cushion is taken before the side cushion. The cushion-imparted side is running side off the baulk and side cushions.

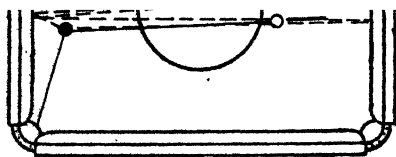


DIAGRAM 1057.—A strong screw in-off which on tables with very resilient cushions often results in the object ball coming to rest in baulk. Cushion-imparted side is check side off the opposite cushion, and consequently if the ball only comes a few inches out of baulk as it crosses the table it may easily re-enter baulk. To ensure its remaining out of baulk the contact must not be full one. Red ball 8 inches from cushion and 22 inches from the baulk. Cue ball 20 inches from the baulk.

the other, because the more resilient the cushion the more will it be pressed into it, and consequently the more will the check side be in evidence when the second cushion is struck. When, however, in the position shown on Diagram 1055 the contact is such that the object ball travels direct from the side cushion to the baulk cushion the cushion-imparted side is running side off the baulk cushion and thus the object ball may be made to emerge from baulk with plenty of speed. Diagram 1056 shows the balls situated exactly as Diagram 1055 and also illustrates the manner in which the object ball travels through when it takes the baulk before the side cushion. Good when playing any stroke which is

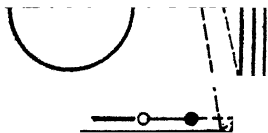
of the nature of the one under discussion always aim for a contact which will cause the object ball to take the baulk cushion before the side cushion, for they know by experience that only in this way can they with any certainty prevent its remaining in baulk.

The very large amount of running side which can be imparted to a cue ball by a forcible impact with an extremely resilient cushion under the most favourable circumstances is illustrated on Diagram 123 in the chapter on *SIDE*, and although the same amount of side cannot be imparted to an object ball by a similar stroke—simply because it is not possible to cause an object ball to strike a cushion with quite as much force as a ball struck by a cue—sufficient side can on many tables be imparted to it by the twist it receives from a cushion to cause it to enter baulk again after having passed out of it.

Diagram 1057 illustrates a strong screw in-off which on tables with very fast cushions often causes the object ball to re-enter baulk after having crossed the line. Of course, in this stroke the ball never comes back into baulk when it strikes the opposite side cushion any very considerable distance out of baulk. When it re-enters baulk it is owing to the strong running side which has been imparted to it by reason of its forcible contact with the cushion.

When the ball crosses the table in the manner shown on the diagram the spin on the ball must be check side off the second side cushion. On a table with slow, hard cushions a ball will never re-enter baulk in the manner illustrated on Diagram 1057, but fast, resilient cushions yield full compensation in strokes of the nature of the one illustrated on Diagram 124 in the chapter on *SIDE*.

Cushion-imparted side reaches its maximum when an object ball strikes the two angles of a pocket with great force. Indeed, the amount of side which may in this way be imparted to a ball on a table with very resilient cushions is sometimes quite exceptional. An experimental stroke to illustrate this is shown on Diagram 1058. If the red ball is made to take the side cushion angle close to the fall of the slate it will be thrown on to the baulk cushion angle and from this angle up the table. Its line of travel up the table will, of course, depend upon how it catches the angles, but if the stroke is played a good many times it will sooner or later travel with something like the direction indicated on the diagram. The stroke should be played with all the strength at the player's command and as a stab or screw *without any side*. If the cushions are very



1058.—An example of the strong spin which is imparted to an object ball when on a table with very resilient cushions it comes into very forcible contact with the angles of a pocket. This cushion-imparted side is running side off the baulk cushion angle and consequently check side off the top cushion.

resilient, convincing proof of the large amount of spin given to the ball by reason of its forcible contact with the angles of the pocket will be afforded by the ball's line of rebound from the top cushion. In extreme cases the ball will return to the vicinity of the baulk pocket, or even to the side cushion in baulk as indicated on the diagram. Nor is this the limit to the amount of side which can in this way be imparted to the object ball, for on some very fast tables the ball will travel to a point on the side cushion close to the baulk pocket after having taken the top cushion right behind the spot. In such a case the amount of side imparted to the object ball is very nearly as much as it is possible to impart to a ball with a horizontally-held cue. The rotation which is imparted to the object ball by this stroke may be made actually visible to the eye in the following manner: Let one player stand at the side of the table with a ball in his hand whilst another one plays the stroke, and then as the ball is travelling up the table let him meet it full in the face with the ball held firmly in his hand. If this is done properly, the moving ball will be brought to a dead stop as far as its journey up the table is concerned, but the speed with which the ball will rotate after being thus stopped will very convincingly demonstrate the large amount of side or spin which has been imparted to it as the result of its forcible contact with the angles of the pocket.

There are plenty of good amateurs and even a couple of well-known professionals who believe that the cue ball may transmit a very large amount of side to the object ball, and that in many locations of the balls retention of position depends entirely upon side or spin being imparted to the object ball *by the cue ball*. Before analysing a few of the strokes which those who believe in the wonderful effects of transmitted side are always ready to bring forward in support of their case it may be interesting to readers to know the opinions of some of the leading present-day professionals and teachers of the game on this question of transmitted side. As far as I know the chief professionals who believe that transmitted side—as differentiated from cushion-imparted side—has a very marked bearing on the game are Cook and Charles Roberts, whereas Dawson, Stevenson, Inman, Williams, Mannock, Nelson, and George Gray are, I believe, strong opponents of the theory that retention of position in many locations of the balls is only possible by means of transmitted side, and are of the opinion that for all practical purposes transmitted side may be considered a negligible quantity. It may seem strange that there should be any diversity of opinion on this question among players of note, but against this it may be remarked that it is not absolutely essential that *the scientific reason* for everything that takes place on a billiard table should be known before one can be a great player, and consequently many a great player may be ignorant of certain points connected with the rotation of the balls which are fully understood by much inferior ones who are, however, deep students of the theoretical part of the game. In support of this contention, John Roberts' own words as expressed in his review of "Badminton Billiards"* may be quoted. In his opening remarks he said:—

"I propose to confine myself to a running commentary on the book, expressing my own opinions on the subject and without any pretensions to authority."

And when he came to the chapter entitled ON THE ROTATION OF BALLS, which to many students of the game is by far the most interesting one in the book, he wrote:—

"Of the chapter ON THE ROTATION OF BALLS I can say very little. I do not profess to understand it."

* This review appeared in the May, 1896, number of "The Billiard Review."

We will now analyse some of the strokes which are often adduced in evidence by those who believe in transmitted side to the extent of its being, in many locations of the balls, a dominant factor in determining the after position.

In Diagrams 1059 and 1060 the position, as regards the in-off to be played, is exactly the same in each case, but if position for a drop cannon is to be obtained as the result of the in-off, the direction given to the object white must clearly be very different when the red is well to the side of the table—as shown on Diagram 1060—from that which will be correct when it is near the centre of the top cushion as shown on Diagram 1059. With the balls to the measure-

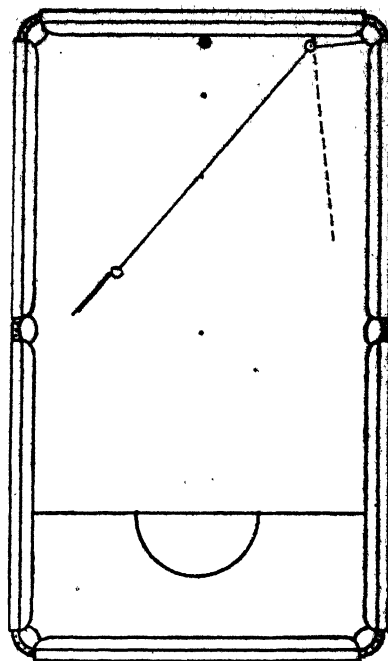
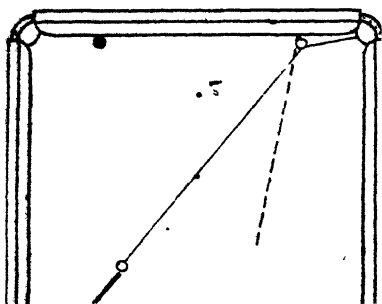


DIAGRAM 1059.—A top-pocket in-off played with check side. The tendency of check side is to cause a somewhat fuller contact than aimed for, with the result that the object ball's line of travel down the table is towards the side cushion. Object white 1 inch from the top cushion and 10 inches from the side cushion. Cue ball $14\frac{1}{2}$ inches from the side cushion and 57 inches from the top cushion.



DIAGRAM 1060.—A top-pocket in-off played with running side. The tendency of running side is to cause a somewhat thinner contact than aimed for, with the result that the object ball's line of travel down the table is away from the side cushion. Position of the cue ball and the object white exactly as on Diagram 1059.

ments given under Diagram 1059 the easiest way of getting the in-off is, of course, with check side, for should the cue ball strike the side-cushion angle—which is here the opposing angle—the side will tend to carry the ball into the pocket. When this particular in-off is played with check side, the object ball always travels down the table on a line which is either practically parallel with the cushion, or which runs towards it as indicated on Diagram 1059. Consequently, when the location of the balls is as shown on Diagram 1059 the check-side stroke is the correct one to play, as pre- anything like good strength is

position will be left for a simple drop cannon. When the position of the balls, however, is as shown on Diagram 1060 good players generally play the in-off with running side, with the result that the object white is given a line of travel more or less as indicated by the intersected line on this diagram. It is this different line of the object ball's travel, according to whether the stroke is played with check side or with running side, which has caused so many players to come to the conclusion that side on the cue ball may be transmitted to the object ball in a very marked degree. The object ball's line of rebound from the top cushion as the result of a running-side stroke may be so entirely different from that which results from a check-side stroke that if these variations were caused by transmitted side, the amount transmitted by the cue ball to the object ball in this and in every stroke played with side would be so great that the question: *Can the cue ball transmit side to an object ball?* would never have arisen. If then the amount of side which the cue ball can transmit to the object ball is really a negligible quantity, how is it that when the in-off is played with running side the object ball's line of travel is so different from that which results from a check-side stroke? The answer is that assuming the same kind of contact is played for in both strokes the actual contacts will be quite different. In neither case will the cue ball travel exactly in a straight line. The check-side stroke causes the ball to pull to the left and thus the contact with the object ball is a fuller one than would have been the case without this pull; the running-side stroke, on the other hand, causes the cue ball to pull to the right and thus the contact is a thinner one than would have been the case had the ball travelled in a straight line. In playing up the table the nap of the cloth always tends to cause a ball struck with right side to pull to the right and a ball struck with left side to pull to the left, but quite irrespective of the nap of the cloth the tendency of side is always to make a ball swerve a little, right side to the right and left side to the left. When the butt of the cue is at all uplifted this swerving of the cue ball is often easily noticeable, but it often takes place in far too slight a degree to be noticed by the eye, yet quite sufficiently to affect the cue ball's contact with the object ball.

The difference in the object ball's line of travel on Diagrams 1059 and 1060 is therefore the result of very different contacts. In the stroke shown on Diagram 1059 the check side tends to cause a fullish contact even when aim is taken for a thinner than half-ball stroke, whereas in the stroke shown on Diagram 1060 the running side causes the contact to be thinner than aimed for. When the stroke is played with check side the tendency of the side is to take the ball into the pocket, whereas although running side tends to pull the ball to the pocket, it also tends to keep it out of it should it strike the opposing angle. The running-side stroke is consequently the more difficult of the two, especially on a table with tight pockets. As a further proof that the different lines of travel which the object ball may be given are really dependent on variations of contact and not on transmitted side, the positional strokes shown on Diagrams 1059 and 1060 can be made without the use of side at all, indeed the thin stroke to cut the object ball away from the cushion is often played without side.

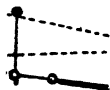
It is this fact, that side on the cue ball by affecting its line of travel causes the contact with the object ball to be fuller or thinner—according to which side has been used—than aimed for, and in this way affects the object ball's line of travel, which has caused so many players to believe that the cue ball can impart a great amount of side to an object ball.

Cook, writing in "The New World of Billiards" of August 5th, 1908, began an article as follows:—

"I have heard that some of the leading professionals consider that side cannot be imparted to the object ball—I mean the first object ball—by a direct clean contact. It seems very extraordinary to me that anyone can seriously hold to such an opinion. For myself I have not the slightest doubt about the first object ball taking side."

And then he seeks to prove that in many constantly-occurring locations of the balls retention of position is only possible by means of side communicated to the object ball.

Diagram 1061 is a reproduction from the article in question, and Cook's argument is that by playing this stun cannon with check side the object white may be kept at the top of the table, by reason of the side which the cue ball communicates to it—left side on the cue ball transmitting right side to the object ball. A close study of this stroke in practice as well as theory must, however, convince any unbiased player that not only in this stroke is the keeping of the object white at the top of the table not due to transmitted side, but that the tendency of transmitted side would be to prevent the ball from remaining at the spot end of the table. In the stroke illustrated on Diagram 1061 it will be noticed that the object white is kept at the top of the table by reason of its having been taken very full indeed—the intersected line indicates a full-ball stroke, though this of course is not quite correct. If the left



side

on the cue ball imparted any perceptible amount of right side to the object white this ought to be recognizable in the ball's rebound off the side cushion, instead of which the ball travels practically straight across the table, and then after striking the second cushion rebounds *up* the table. A very little reflection will make it quite clear that if left side on the cue ball gave sufficient right spin to the object white to make transmitted side a factor of any importance whatever in this stroke this spin would cause the ball to rebound *down* the table after travelling straight across it, and not *up* it as shown on the diagram. Indeed, the course of the white ball as shown on Diagram 1061 is an impossibility as cushion-imparted side—which is, however, only very noticeable in strong strokes—would also tend to take the ball down the table if it struck the first cushion at the angle shown on this diagram. On tables with very resilient cushions cushion-imparted side has, however, a most important bearing on the object ball's line of travel, and on such tables the stroke shown on Diagram 1062 is a possible one. Here, the contact with the object white, although a very full one, is considerably less than dead full, and consequently

DIAGRAM 1061.—A reproduction of one of Cook's diagrams, illustrating his article on "transmitted side," which appeared in "The New World of Billiards," August 5th, 1908.

the object white travels slightly down the table, as well as across it. The strength of the stroke causes the object ball to be pressed well into the cushion, with the result that it gets a strong twist as it is thrown out and the effect of this twist or spin is shown when the ball strikes the *second* cushion.* Without this spin—running side off the first cushion and consequently check side off the second cushion in this stroke—the ball would continue to travel lower down the table, instead of which it actually rebounds *up the table* after its contact with the second cushion. Transmitted side could never account for this alteration from the normal angle of rebound, for right side on the object ball must inevitably tend to take the ball down the table after its contact with the second cushion, and thus the contention that check side tends to keep the object ball at the top of the table in strokes of the nature of the ones shown on Diagrams 1061 and 1062 by reason of the side which this side imparts to the object ball falls to the ground.

If this is so it may be asked why do all good players use check side when playing strokes like those under discussion? The answer is simple. In order that the object ball may be kept at the top end of the table the absolutely essential thing in these strokes is a very full contact with this ball—the fuller the better—but unless these stun strokes are well handled a very full contact may easily cause the cannon to be missed by reason of its being over-screwed or over-stunned. Check side allows of a fuller contact without the stroke being missed than is ordinarily possible without side. Not only this, but it tends to deaden the cue ball, consequently this ball travels to the second object ball with less speed than would be the case with a running-side or even a plain-ball stroke. It

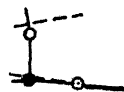


DIAGRAM 1062.—A stun stroke in which, on tables with very resilient cushions, the object ball may rebound up the table off the second cushion after having travelled just slightly down the table previous to its contact with the first cushion. In this case the cushion-imparted side is check side off the second cushion by reason of the ball having travelled direct from one side cushion to the other.

*As the twist which a ball gets by reason of its being embedded in a resilient cushion is always running side off the cushion into which it has been pressed, the red ball—viewed from the position of the player at the table—gets a right-to-left spin in the stroke illustrated on Diagram 1062, and the tendency of this cushion-imparted side must be to take the ball *up* the table when it strikes the second cushion. In the stroke illustrated on Diagram 1061 the impact with a resilient cushion must give the object ball a left-to-right spin, and the tendency of this spin must be to take the ball *down* when it strikes the second cushion. The reason that the contact with the cushion may give the object ball a different direction of spin in two apparently similar strokes is capable of a very simple explanation. The direction of the spin which is given a ball as the result of a strong impact with a cushion depends upon the direction in which it has travelled to the cushion. On Diagram 1061 the object ball is shown travelling *up* the table to the cushion, whereas on Diagram 1062 it travels *down* the table to the cushion. In the one case therefore the ball gets a left-to-right spin, and in the other a right-to-left one.

is quite possible in either of the positions illustrated to get the cannon taking the first object ball almost dead full without using any side, but such a stroke is much more difficult than the check-side stroke owing to the greater stunning of the cue ball which is required, consequently good players always play these strokes with check side.

Diagram 1063 is another reproduction from Cook's article, and in discussing the in-off shown on this diagram Cook writes:—

"Very often one has to play a strong forcing loser into a top pocket when the balls are in the upper part of the table. It is mostly with a vague uncertainty about the object ball running behind the baulk line that the ordinary player goes out for this shot. He has yet to learn what the professional knows, that the transmission of side through cue ball to object ball will keep it in the open field of play."

And in describing it:—

"This shows a strong forcer into the right top pocket, plenty of right side being given to the cue ball, which, as it comes into contact with the object ball, imparts a left to right spin, which is left side of course. Had left side been used on the cue ball it would then have given right side to the object ball, and assuredly sent it behind the baulk line."

It seems strange that a clever player like Cook should be guilty of such an absurdity as to pretend that in the forcing in-off illustrated on Diagram 1063 the red is kept out of baulk—and well out—by transmitted side, when any player who is at all advanced in the game knows that in the stroke shown on

this diagram it is the very fullish contact in conjunction with the strength of the stroke which prevents the object ball from travelling to the baulk end of the table. The fullish contact causes the ball to strike the cushion considerably higher up the table than would be the case with a half-ball stroke, and the strength of the stroke causes it to be pressed into the cushion—the fuller the cushion is struck the more is the ball pressed into it—and as the result of its being pressed into the cushion the angle of rebound becomes very much squarer than the normal one, and in addition to this running side is imparted to the ball. The running side is check side off the opposite side cushion, and consequently the tendency of this cushion-imparted side is to keep the ball in the upper half of the table. Indeed, on a table with very resilient cushions a contact as full as the one shown on Cook's diagram would in this forcing stroke give the object ball a line of travel more like the one shown on Diagram 1064. Here, the effect of the cushion-imparted side is clearly shown when the ball strikes the second cushion. Provided that the object ball is taken *exactly the same* in every case it will be given the same of travel no matter whether the

DIAGRAM 1063.—A reproduction of a diagram by Cook, used in illustration of his article on transmitted side, which appeared in "The World of Billiards" of August 5th, 1908.

with running side, with check side, or without side at all. As previously explained, however, the tendency of check side is always to cause a fuller contact and running side a less full contact than the one aimed for, and consequently in this forcing stroke a running-side stroke may result in the object ball entering baulk, but when it crosses the line or gets near it its line of travel down the table is due to a somewhat thinnish contact and has not been influenced in the slightest by transmitted side. Does Cook seriously mean that in the stroke illustrated on Diagram 1063—which is a reproduction of his own diagram—the red ball after taking the cushion as high up as shown on the diagram would have entered baulk had the stroke been played with running side? Such a thing seems unbelievable. If side on the cue ball could affect the running of the object ball to so great an extent, that whereas running side in the stroke illustrated on Diagram 1063 caused the object ball to enter baulk, check side kept it well out of it—the contact with the ball being identical in both cases—the amount of side transmitted by the cue ball to the object ball would be tremendous. Indeed, in order for Cook to be able to prove his contention the object

ball would have to behave in the same way that a cue ball struck with plenty of side does when it meets a cushion. Naturally what happened in one stroke played with side would happen in every stroke played with side, and could Cook's contention be upheld not only would no player have ever argued about the possibility or otherwise of transmission of side, but the whole game of billiards would be vastly different from what it is in reality. If on the other hand Cook admits that in the position shown on Diagram 1063 the contact which keeps the object ball out of baulk is a fuller one than the one which sends it into baulk he cannot logically insist that the two strokes afford any light whatever on the question of transmitted side. Different contacts must give the object ball different lines of travel, and his case that the object ball's different lines of travel in two different strokes are due to transmitted side falls to the ground like a house built of cards as soon as he admits that the contact is not the same in both strokes.

That Charles Roberts—a brother of the great John Roberts—also believes that side may be communicated to an object ball to such an extent as to make this transmitted side a most important factor in the playing of billiards may be

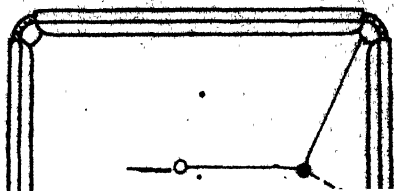


DIAGRAM 1064.—An example of the manner in which the object ball may travel on a table with very resilient cushions when with the balls in the position shown on Diagram 1063 the in-off is played with plenty of pace. The effect of cushion-imparted side is shown when the object ball strikes the second cushion.

seen from the following extract from the chapter on SIDE in his book, "The Complete Billiard Player"—

"Lastly, I must say a word or two on communicated side. That is briefly this. If you aim with side on your ball at an object ball and drive that ball on to a cushion, the side on your ball will be communicated to the object ball in a modified degree and reversed. That is to say, when the object ball strikes the cushion it will leave it at an angle which is not only affected by side, but by the opposite side to that which you put on your ball. If you put running side on your ball the object ball will come off the cushion with check side; if check side, then with running side, but always modified. This subject has provided matter for a good deal of controversy in the billiard world. Many experts say there is no such thing as communicated side; others say there is. I am with the latter. I know it exists, but I am not going to weary you with any mathematical proofs such as the controversialists love to flash about. Take my word for it and you will not be far wrong. I have introduced the subject here because it is strictly connected with side, though the application belongs to a more advanced stage than we have yet reached. In a later chapter, when we are more ready for it, you will find me referring to it again, and showing by diagrams what it may do to help break-making."

And by his Diagrams 54 and 55—of which Diagrams 1065 and 1066 are reproductions—concerning which he writes:—

"It must be stated that there are many strokes which may be made with either side or screw.* It is simply a matter of where you wish to leave the object ball afterwards. Mark you! this is a little matter that the experienced player who makes 30 and 40 breaks will easily understand, but others perhaps won't. It involves the question of communicated side to which I referred at the end of my chapter on SIDE."

"The screw stroke in Diagram 54 can be made with either right or left-hand side on your ball. Why does one use left-hand side? To send the object red ball into position in the middle of the table. What effect would right-hand side have? It would send the red ball off the cushion at an acute angle and might leave it in baulk as shown on Diagram 55."

If these two diagrams are compared it will be seen that in the one case the red ball strikes the opposite cushion just slightly above the pyramid spot, whereas in the other it takes the second cushion well below the centre pocket. As Charles Roberts gives these strokes as proof of transmitted side we must presume that the contact with the red is supposed to be the same in both strokes, for if he admits that the check-side stroke is a fuller one than the other, the strokes are valueless as a proof of the transmission of side. If on the other hand the same contacts can give such surprisingly different results, according to whether the stroke is played with check side or with running side, why does Charles Roberts say that side on the cue ball is communicated to the object ball *in a modified degree*? The cue ball would clearly have to impart practically all its side to the object ball in order to influence this ball's line of travel to the extent indicated on Diagrams 1065 and 1066. Again, if side on the cue ball so excessively alters the object ball's line

DIAGRAM 1065.—A reproduction of Diagram 54 in Charles Roberts' book, "The Complete Billiard Player," illustrating his argument on "transmitted side."

* Presumably this should read "either side and screw."

of rebound from a cushion when the cushion is taken at a more or less oblique angle, can Charles Roberts explain how it is that this great effect of transmitted side so mysteriously disappears when the ball to which side has been communicated takes the cushion full in the face, that is, at a right angle? This is a question which the extreme transmitted-side faddists always fail to answer.

In the position shown on Diagram 1065 the in-off is played with check side owing to the pocket being blind. If the pocket is not a very tight one the in-off can be got with running-side, but such a stroke is more difficult than the check-side stroke, as unless the ball travels straight to the pocket the tendency of running side is to keep the ball out of the pocket. Although the stroke is thus more difficult with running side it is possible to get it with less strength with this side than with check side, yet Charles Roberts in order to get the red ball into baulk with the running-side stroke—Diagram 1066—makes it travel half as far again as it does on Diagram 1065 with the check-side stroke, although for the purpose of his argument we must assume that the strength as well as the contact is intended to be the same in both strokes.



DIAGRAM 1066.—A reproduction of Diagram 55 in Charles Roberts' Book, "The Complete Billiard Player," in support of his case for "transmitted side."

Side on an object ball is occasionally very noticeable after a kiss between the object balls or between the cue ball and an object ball or after a ball has been simultaneously hit by the other balls. In the latter case it is easy to understand that if a ball is forcibly hit at opposite sides by two other balls travelling from different directions in such a manner that it is momentarily locked between them, some spin must be given it, and under the most favourable conditions the rotation imparted to the ball may be very marked. An experimental stroke will prove this: Take a ball in each hand and smartly hit a stationary ball on each side simultaneously, the movement of the hands being in opposite directions. With very little practice the ball can be given quite a strong spin.

When, however, the kiss is only between two balls, the side on an object ball which is occasionally very noticeable after a strong kiss, has not been imparted to it as the result of the forcible meeting of the two balls. It was there—imparted to it by a very strong contact with a cushion or with the angles of a pocket—before the kiss took place. All that a decided kiss between two moving balls does is to check and in some cases to almost stop the forward run of the balls, and the more the forward movement of a side-laden ball is stopped the more in evidence does the spin become. For example, suppose that in the stroke shown on Diagram 1058 the red ball, rotating with strong side by reason of its very forcible contact with the angles of the baulk pocket, came

whilst on its journey up the table into contact with another ball travelling with great speed towards baulk, and that the contact was so full that the red ball travelled to a cushion with most of its pace gone, the side on this ball would be very strongly in evidence when the cushion was struck.

To briefly summarise the whole question then, the conclusions we have arrived at are:—

Firstly: The cue ball may impart side to an object ball, but the amount so transmitted even under the most favourable conditions is always so small as to be a negligible quantity so far as the playing of the game is concerned.

Secondly: The very different lines of travel so often given to the object ball according to whether check side or running side has been used for the stroke are not caused nor determined by transmitted side but by different contacts.

Thirdly: Strong contact with a cushion may impart a very considerable amount of side to a ball, especially is this the case when the contact is with the angles of a pocket.

Fourthly: A ball may be given a strong spin should it happen to be momentarily caught between two other balls moving in different directions, but when a kiss takes place between two balls only side is not imparted to either ball by the kiss.

FINIS.

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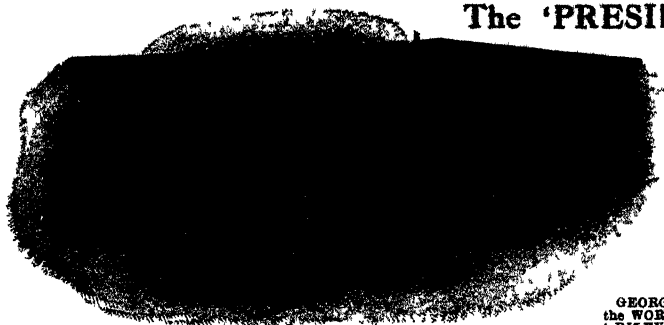
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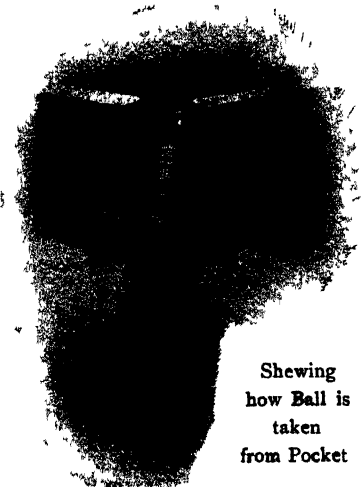
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