PART 51: TRIPLE (C)

Still another example of a triple is shown in Figures 92 and 93. As shown in Figure 92, there are only two disks on the board, A-1 and B-1. The shooter plays to knock B-1 against A-1 gently. The shooting disk hits B-1 (Figure 93), and stops against it for a 10 at C. B-1 is knocked against A-1, and stops at B-2 for an 8. A-1 is tapped onward to stop at A-2 for a 7.

Gain for the shot: 25 points.

ANOTHER TRIPLE. In a situation of a minor tournament there were initially three disks on the board, C-1, B-1 and E-1 (Figure 94). The shooter Red was 27 points behind at the time of this shot, which was the last-shot of the half-round and which proved to be the last play of the game. The opponent had the winning score on the board, the 7 at E-1.

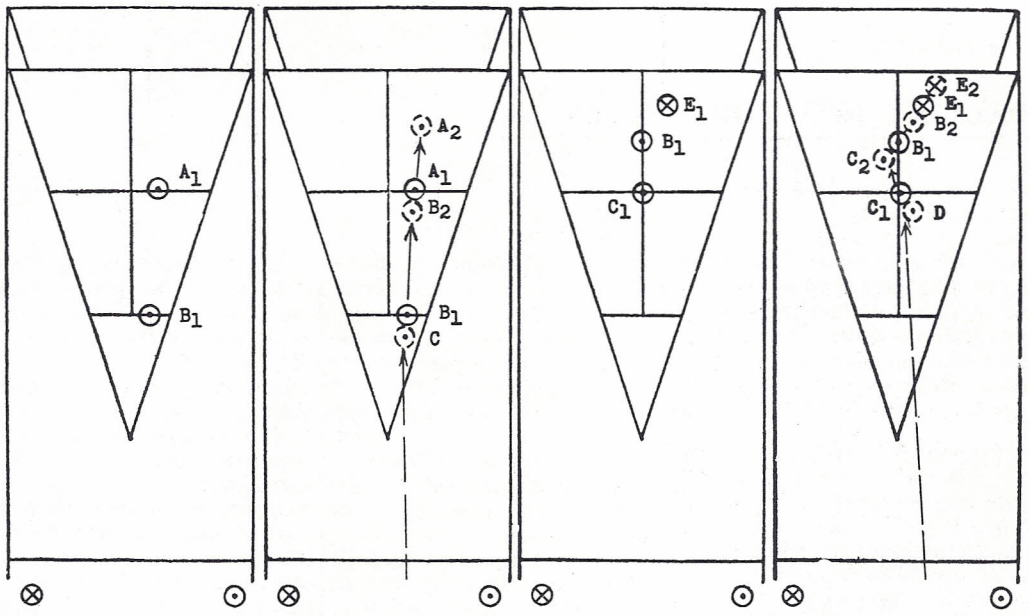

Figure 92 Figure 93 Figure 94 Figure 95

The ordinary play would have been to shoot to put E-1 in the kitchen and thus save game. However, the shooter thought that he might not only save the game but also win the game in the same shot. So he shot for a triple.

His shooting disk hit C-1 to right of center (Figure 95) and glanced very slightly to the right to stop at D. C-1 was driven against the left side of B-1, and glanced slightly to the left to stop at C-2 for a 7. B-1 was knocked against E-1, where it stopped in place at B-2 for a 7.

These three scores completed the triple, for a gain of 22 points, but this was not enough to overcome the opponent's lead.

Red had hoped also to tap E-1 into the kitchen, really making a quadruple play, but this part of the shot failed. E-1 was moved onward only slightly to E-2. And the opponent won the game.

Sometimes such complicated shots are presented, and are even sometimes forced upon a player at the end of a half-round or at the end of a game, as a forlorn hope in a difficult situation. At these and other times, attention to searching for practicable plays, even though complicated, should be remunerative.

ANOTHER TRIPLE was described in our column of Notable Shuffle Shots, March 9, 1958, showing a complicated successful triple by Paul Cole in the 1955 Florida State Championship Tournament.

PART 52: HITS AND ANGLES (C)

Some general and preliminary considerations concerning hits and angles were presented in Parts 9 and 10. It now appears desirable to return to that topic and cover it more fully, in view of the subjects of Bunt, Kitchen, and Combination, soon to be treated.

As was said in Part 9, if it is desired to knock a disk directly onward, it is struck in the center that is, with a full hit. If it is to be moved only a short distance it is of course struck lightly; if it is to move a long distance, it is struck harder.

DISTANCE. But these are very general indications, and it should be possible to provide a more accurate determination as to how hard to hit a disk to move it to a certain distance.

As the shuffler has no doubt realized, the determination of how hard to shove a shooting disk in order to make it attain a given spot is found by fixing the eyes on that spot and concentrating on the idea that that is the target spot. The muscles, based on previous shots on the same court, unconsciously adjust themselves to the distance, and the shot is accomplished.

On the left of Figure 96, disk A-1 is shot to reach A-2, there being no disk in the way. It reaches A-2.

In the center of the same figure, the disk C-1 is shot with exactly the same force and it is therefore shot to go exactly the same distance. However, disk E-1 is in the way, and it is hit exactly on center. As has been seen in other cases, the shooting disk C stops at C-2 when it hits E-1, and E-1 is knocked onward toward E-2.

In accordance with a long-established principle of physics, the momentum of disk C is communicated to disk E-1 and the distance it moves is the same distance as C would go if E-1 were not there, that is, to E-2.

AIMING. Applying this principle to the original problem, the way to shoot to move E-1 in a straight line to E-2 is to aim at point E-2, beyond and directly in line with the center of E-1, keep the eye on that point, and shoot with the thought that the shooter wants his shooting disk to go to E-2. Then when the shooting disk hits E-1, the latter will move to E-2.

In further application (third sketch in Figure 96), if it is de-

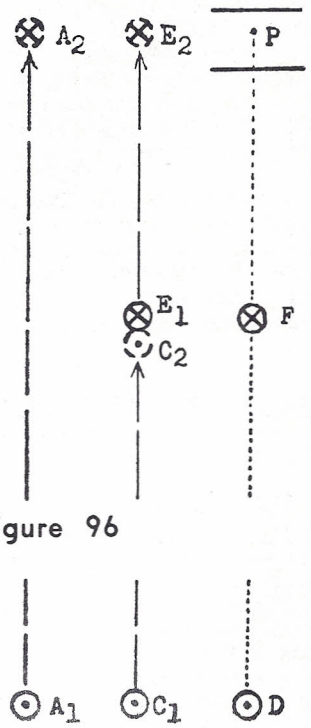

Figure 96

sired to put a disk F in the kitchen, the shooter should aim at point P in the kitchen, on a line directly over the center of the target disk. The shooting disk will stop when it hits, and the struck disk F will go on to the kitchen.

Applying still further the same principle, if either of two disks is to be put in the kitchen, and one disk is at a distance of one foot from the kitchen while the other is at nine feet from the kitchen, then the same [illegible] would be used for either shot.

PART 53: HITS AND ANGLES (D)

By making a detailed study of angles it is desired to show how the shuffler can find a simple and practical method of selecting and utilizing aiming points which will enable him to make reasonably accurate angle shots.

SCIENTIFIC. Discussions of hits and angles are in accordance with principles long established in the science of physics. The discussions are designed to be as simple as practicable and yet explain the ideas which a good shuffler should understand.

In several instances, instead of exact mathematical accuracy, some approximations have been made for simplicity, but the approximations are generally more accurate than the shuffler's aim and shooting.

STUDY DIAGRAM. In Figure 97 there is shown a disk B-1 striking another disk E-1 at an angle. Disk E-1 has been lying on the court. Disk B-1 has been moving along the shooting line LPM.

Positions of the disks are shown at moment of contact or of impact. The centers of the disks are marked by dots, at B-1 and E-1. The disks are of course six inches in diameter.

Point P is the aiming point (see also part 6). In the drawing it is about two inches to left of center of the struck disk E-1.

DRIVEN LINE. The line joining the centers of the disks passes through point of contact T between the two disks, and is extended onward to some point E-2.

As all billiard players know, if it is desired to drive a billiard ball in a given direction it should be struck on the opposite side. Similarly, the struck disk will move directly away from the point T where it is hit.

It should be noted that the point of contact T is not the same as the aiming point P, and must not be confused with it.

It is along the line from B-1 through T and E-1 toward E-2, that is, the line joining the disk centers and extended onward toward E-2, that the struck disk is always driven. Let this be called the "driven line." It is an important line.

The shooter often plans where he expects to drive the struck disk, and this driven line always shows its direction.

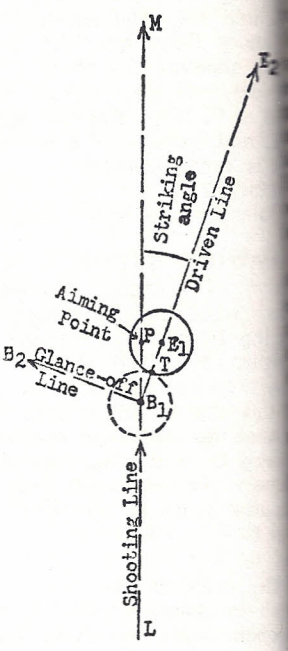

Figure 97

PART 54: HITS AND ANGLES (E)

Figure 97 shows the aiming line LP, the line along which the shooter should aim. And, assuming that the player shoots straight along his aiming line in this case, it is also the shooting line. This shooting line is extended to some point M.

STRIKING ANGLE. The angle MBE between the shooting line LPM and the driven line BE, is called the "striking angle," also sometimes the "angle of hit." It shows the angle at which the struck disk is driven away along the driven line.

These various terms are used frequently in these articles in connection with shots involving angle hits.

In the sketch the striking angle is approximately 20 degrees. This is about the same angle by which each of the diagonal side lines of the court diverges from the center line, and is a most important angle to remember.

If the striking angle were wider, perhaps 30 degrees, 45 degrees, or 60 degrees, the struck disk would diverge more to the right side.

RIGHT ANGLE. The line from B-1 to B-2 is drawn perpendicular to the driven line, that is, at a right angle with it (90 degrees, or corner of a square). Let this line from B-1 to B-2 be called the "glance-off line," also an important line, along which the striking disk will always move as it glances off the struck disk.

It is a general rule that the two disks always move away from each other along lines which make an angle of 90 degrees with each other, as shown above for the driven line and the glance-off line. Change the striking angle as desired, this will remain true.

(This is theoretically correct although there are differences due to the fact that the disks are not perfectly resilient in a scientific sense, but these differences can be neglected.)

PART 55: HITS AND ANGLES (F)

For some of us who may be rusty in our book larnin', it may be well to review the matter of angles.

Figure 98 shows various angles, each marked with the corresponding number of degrees showing the size of the angle. For example, angle ABC is 10 degrees in size, angle DEF is 20 degrees, while other angles are shown as 30, 45 and 60 degrees. And there is also 90 degrees, or a right angle, or the corner of a square. This last angle can be divided, for example, into two angles of 45 degrees (last sketch of Figure 98).

In considering angles, the shuffler should not be frightened by the thought that they are unduly complicated. The application becomes really quite simple, as will be seen.

TWENTY DEGREES. The most important angle to be considered is shown in Figure 99. It is the angle YWZ between the center line of the court and one of the diagonal side lines. It is approximately 20 degrees, that is, about the same as angle DEF in Figure 98. It is easy to see and to remember, since it is there on the court, marked in part by painted

nes.

If there is a disk A lying on ne of the diagonal side lines Figure 99) and it is desired to ive that disk along the line to r toward X, the aiming point use is two inches from the cen- r of the disk and in this case left of center. (See also Fig- re 97 in Part 53.) The driven e AX makes an angle of 20 egrees with the shooting line nd coincides with the diagonal ide line.

For simplicity, it is assumed in he cases under consideration at his time that the shooting line straight along the court, not iagonally. However, as we shall ee later, many shots that are ot perfectly straight along the ourt can be treated as if they ere.

TWO INCHES. In Figure 99 here also are shown a number of other lines GH, FC and EB, all parallel to the diagonal line at the right side of the triangle. Suppose it is desired to knock disk E against disk B. The line from E to B, being parallel to ne of the diagonal side lines, makes an angle of 20 degrees with a shooting line which is straight along the court. In order to drive E along the line EB and against B, the aiming point is again two inches to left of center of E.

Similarly, in order to drive disk F against disk C, the aiming point is two inches to left of center of F. Finally, to drive G against H, the same location of aiming point is used, two inches left of center.

Of course, the same idea applies in Figure 100 for lines parallel to the other diagonal side line. For any of the shots shown, the aiming point for the shooting disk is two inches to right of center of the first disk struck, and the striking angle is 20 degrees.

In general, therefore, in order to drive a disk along a line at a 20-degree angle with the shooting line, or parallel to a diagonal side line, the aiming point is two inches from the center of the tar get disk.

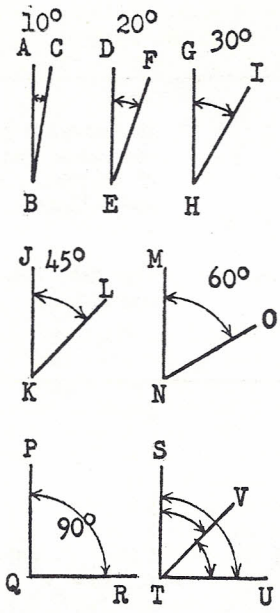

Figure 98

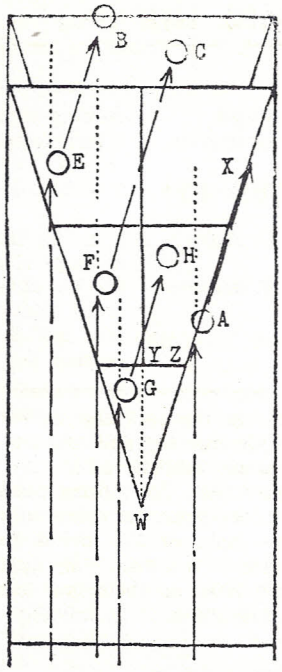

Figure 99

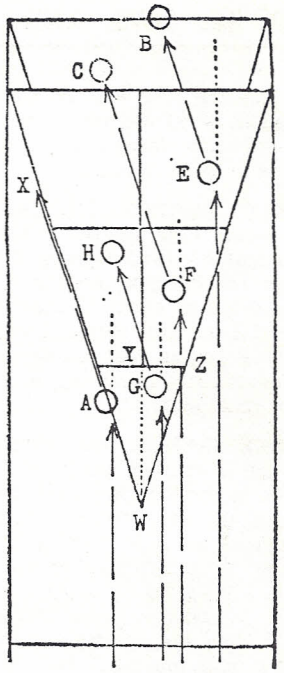

Figure 100

PART 56: HITS AND ANGLES (G)

Essentially the same method an be used for driving disks away at an angle of 10 degrees as was described in the preceding article for the angle of 20 degrees.

TEN DEGREES. It has been seen that the angle between the court center line and either of its diagonal side lines is about 20 degrees. Half of this angle is about 10 degrees and is shown in Figure 101 as the angle YWU between the center line and the line WU. The shuffler should be able to imagine this line WU on the court, halfway between the center line and a diagonal side line.

In order to drive a disk E toward A, along this line which makes an angle of 10 degrees with the center line, the aiming point is one inch to left of center of the target disk E. The striking angle is of course 10 degrees.

ONE INCH. Similarly, in order to drive a disk F at a disk B along a line parallel to the line WU, the aiming point is one inch to left of center of the first struck disk F. Finally, to drive G against H, along a line that is also parallel to WU, and at an angle of 10 degrees with a shooting line straight along the court, the aiming point is similarly one inch to left of center.

Likewise, as in Figure 102, if disks are to be driven diagonally to the left along lines EA, FB, and GH, which are 10 degrees from shooting lines straight down the court, the aiming point is one inch to right of center.

AIMING POINTS. Thus far there have been developed two striking angles and the corresponding aiming points.

Striking angle	Aiming point
10 degrees	1 inch from center
20 degrees	2 inches from center

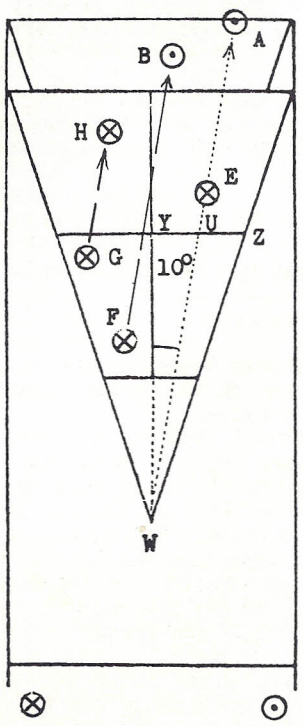

Figure 101

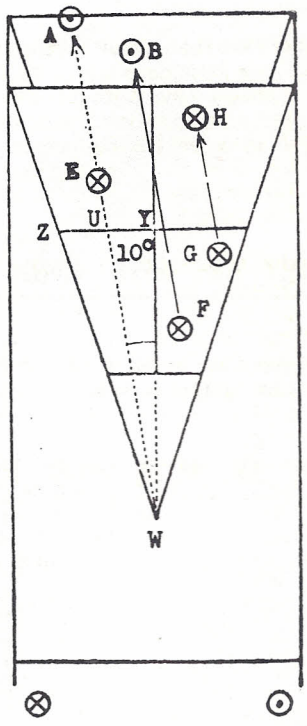

Figure 102

PART 57: HITS AND ANGLES (H)

Considering now hits at striking angles of 30 degrees (Figure 103), the same ideas can be applied as in Parts 55 and 56.

THIRTY DEGREES. The angle YWV between the line WV and the center line WY is 30 degrees. The shuffler can imagine the line WV on the court as about 10 degrees outward from the diagonal side line. Such angles need not be exact, but merely estimated in an approximate manner.

THREE INCHES. The aiming point for a striking angle of 30 degrees is three inches from the center of the first struck disk, at the edge of the disk, a point easily seen. It is indicated on each disk in Figure 103 by a dot.

Thus, in order to drive disk A onward along the extension of the line WV to or toward X, the aiming point is three inches to left of center of A.

Similarly to drive disk E at F, along a line parallel to the line WV, the aiming point is also three inches left of center. Again, to drive G against B, also parallel to WV, the aiming point is three inches left of center.

The line WS is likewise drawn at a 30-degree angle with the center line, but on the other side of the court. And to drive H against C, parallel to WS, the aiming point is three inches right of center.

FORTY-FIVE DEGREES. For one other striking angle, that of 45 degrees, the aiming point should be noted. The striking angle of 45 degrees is best remembered by the fact that the two disks diverge to right and left by the same amount after the hit (Figure 104). The aiming point is 4¼ inches from the center of the target disk, or 1¼ inches from the side of the disk. This can be remembered as about four inches for 45 degrees. It is indicated by a dot.

Angle	Aiming Point	Remarks
10 degrees	1 inch from center	10 degrees is half of the 20 degree angle betwe the center line and a diagonal side line.
20 degrees	2 inches from center	20 degrees is the angle between the center li and a diagonal side line.
30 degrees	3 inches from center, or edge of disk	
45 degrees	4¼ (or about 4) inches from center, that is, 1¼ or 1 inch outside the edge.	The disks move outward about equally in ang and distance.

THIN HITS. For striking angles of more than 45 degrees, it is not practicable to remember and use details. Such angles can all be classed as thin hits. (In fact 45-degree hits can often be considered as thin hits.)

In this connection, for 60, 70 and 80 degrees, the aiming points are respectively 5¼, 5 2/3 and 5⅞ inches from the center of the target disk. The differences between the various aiming points in this range are so slight that few if any shufflers can be expected to shoot with sufficient accuracy to make any distinctions among them.

TO REMEMBER. In summary, the aiming points for the four principal striking angles are easy to remember, and are shown in the box.

It is also to be remembered that what is aimed at the aiming point is the line of the cue through the center of the shooting disk.

(For those who desire finer adjustments, after mastering the foregoing, aiming points at one-half inch for 5 degrees, 1½ inches for 15 degrees, and 2½ inches for 25 degrees may be used.)

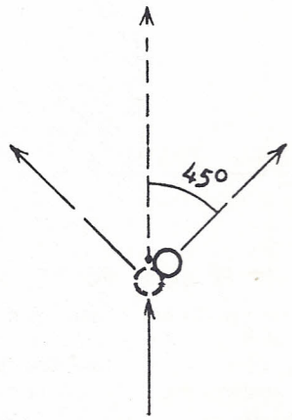

Figure 104

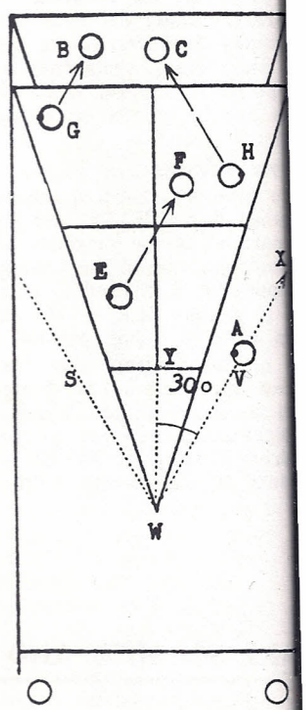

Figure 103

PART 58: HITS AND ANGLES (I)

Figures 105 to 109 show the directions and distances of movement of disks after hits at various angles.

In each case the shooting disk B, aimed at point P and moving along the shooting line LP, strikes the target disk E-1. At the instant of impact the disk B is at B-1.

In each case, the aiming point P is marked by a dot and is located to left of the center of disk E-1, by distances of one inch, three inches (or left edge), 4¼, and for the last two cases over five inches. These distances of P from the center of the target disk give respective striking angles of 10, 30, 45, and about 60 to 80 degrees.

EQUAL SPREAD. Referring to Figure 107, it is shown that, as previously stated in Parts 10, 44 and 57, when the striking angle is 45 degrees, with aiming point 4¼ inches from the center or 1¼ outside the edge of the target disk, the two disks move outward diagonally and equally in angle and distance.

Each of the various drawings shows the shooting line LP extended to M, which indicates the point to which the shooting disk would go if disk E-1 were not in the way. The two disks must go shorter distances, and with this striking angle of 45 degrees they go about 7/10 as far.

STRUCK DISK FARTHER. Hits with striking angles of less than 45 degrees are more common than those with over 45 degrees. For a hit with a striking angle of 10 degrees, as in Figure 105, the distance from E-1 to E-2 that the struck disk moves is farther than in the case of the 45 degree hit, and is almost as far as the distance from B-1 to M that the shooting disk would have gone. It is about six times the short distance that the striking disk moves, from B-1 to B-2.

(It is not to be expected that the shuffler should try to remember these figures, but he should remember, for example, that certain distances are much greater than certain others.)

Similarly for the striking angle of 20 degrees, with aiming point P located two inches from center (not shown in the figures), the struck disk goes about three times as far as does the striking disk.

And for the striking angle of 30 degrees, shown in Figure 10 with aiming point P three inches left of center or at the left edge

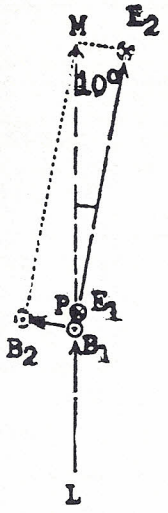

Figure 105

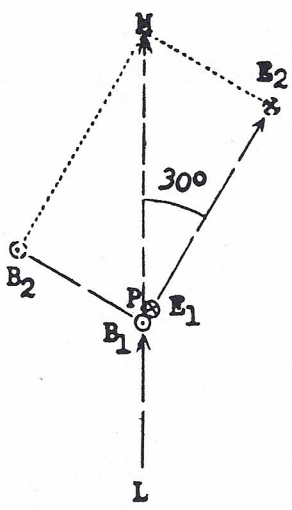

Figure 106

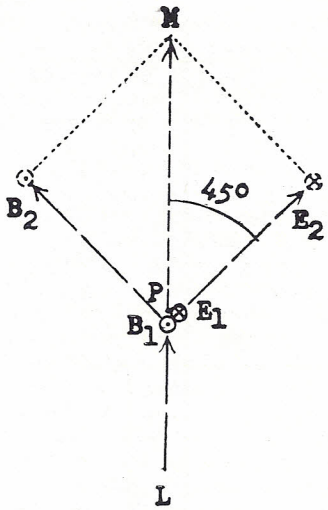

Figure 107

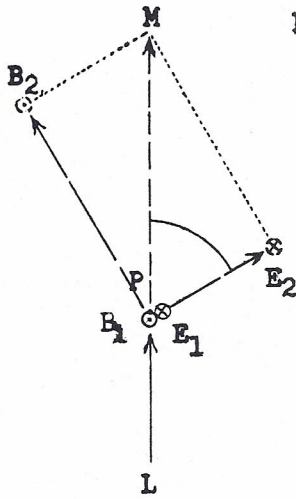

Figure 108

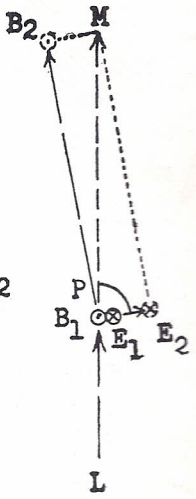

Figure 109

the struck disk moves nearly twice as far as does the striking disk.

THIN HITS. Figures 108 and 109 show two thin hits. The aiming point in each case is more than five inches from the center of the target disk, or more than two inches from its edge. For reasons given in Part 57, it is convenient to consider these hits as merely thin hits.

For these thin hits, the struck disks move short distances to the side, and the striking disks move onward for much greater distances.

PART 59: HITS AND ANGLES (J)

Continuing the discussion from the preceding article, and using the same diagrams in Figures 105 to 109, we are concerned with the directions and distances of movements of disks after angle hits.

DISTANCES MOVED. We have seen the relative distances to which disks will go, for example, that one will go six times as far as the other for a striking angle of 10 degrees.

Of course the distances that both disks move will be greater or less in accordance with the speed of the shot, that is, for a light tap both disks will move but little, while for a harder blow disks will move farther.

Again, on a fast court, the disks, will of course move faster and farther for a shot of any given force, and on a slower court the distances will be shorter.

However, for any given striking angle, the distances moved will always be in the same proportion. For example, with a 20-degree striking angle, the struck disk will always move about three times as far as the striking disk.

CLEARING BOARD. When it is desired that both disks leave the board, this can be accomplished by the use of angle hits and fairly speedy shots. A suitable angle for use in clearing the board is the striking angle of 30 degrees, with aiming point at the edge of the target disk.

Although the glance - off distance of the striking disk is relatively short for this angle, the speedy shot should make this distance long enough for the shooting disk to reach the alley. (See also Part 21.)

GLANCING HIT. (See Part 19) In glancing hits to make scores, it is desirable for the shooting disk to glance to the side. The distance of movement to the side depends of course upon the speed of the shot. But it also depends upon the striking angle, as may be seen from the diagrams. For example, with a hit at 30 or 45 degrees, the striking disk moves farther to the side than for a hit at 10 or 20 degrees.

For reasons that will appear later, glancing hits in which it is desired to glance the striking disk to a given spot should rarely be used with thin hits.

PART 60: HITS AND ANGLES (K)

Thus far the assumption has been made that the angle shots under consideration have been aimed so that the shooting lines are straight along the court. The question arises as to what difference there is if a shooting line is at an angle. And how much angle might there be?

FIVE DEGREES. Suppose a disk D is placed on the separation triangle between the starting areas in Figure 110 and is shot straight down the court on the center line at disk B, also on the center line. Then suppose that that same disk D, starting from the same point, is shot at disk C, in the extreme corner of the 7-area. The shooting lines DMB and DNC for these two shots are separated by an angle of about five degrees.

Then suppose that the disk E is placed at the extreme outer edge of the starting area and is shot at the target B, with shooting line ELB. The angle EBD between the shooting line ELB and the shooting line DMB is again about five degrees.

These two cases indicate the amount of angle for which a correction may be needed for shooting lines that are not straight along the court.

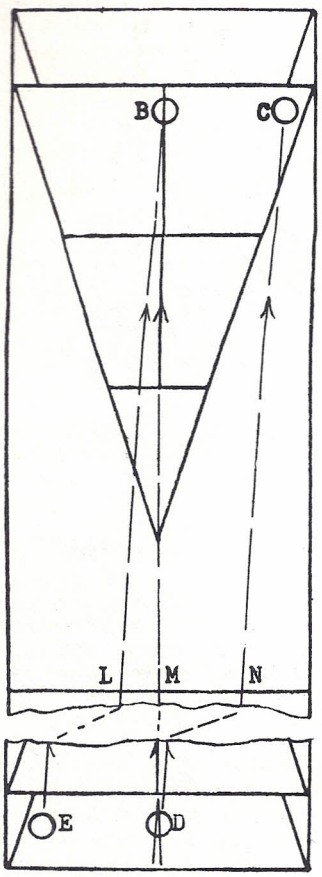

Figure 110

AIMING POINT. We have seen in Parts 55-57 that a change of an aiming point from target center to one inch from center causes a change in the striking angle of 10 degrees. Add another inch and the striking angle is changed again by 10 degrees. The same occurs for the next inch of change. Thus in order to change these angles by 10 degrees the aiming point is changed one inch. Accordingly, to cause a change of five degrees in striking angle, the aiming point needs an adjustment of one-half inch.

Since many players cannot expect to be accurate within one-half inch to right or left in shooting, it would seem that they can in most cases neglect a correction for five degrees. Also in many cases the angle concerned is less than five degrees and can normally be neglected.

Therefore, when a shooting line is not parallel to the center line of the court, there are many times when this fact can be neglected. In such cases the shooter can simply use the aiming points as stated in Part 57, without correction for slanting of the shooting line along the court.

FINER CORRECTION. On the other hand, for those who desire a greater degree of accuracy, a method of applying a correction is as follows. Suppose that it is desired, as in Figure 111, to shoot disk G against disk H. And further suppose that for a shot straight along the court, along the line LM, if such were possible, the striking angle needed to drive G against H is 20 degrees.

However, it happens that this shot cannot be made, for disk A is partially in the way. So instead of starting from the left edge of the starting area, the shooter places his shooting disk at the extreme outer edge of his starting area, with a change of angle which we have seen to be about five degrees, with the expectation of shooting at G along the line NQ.

The striking angle MGH (20 degrees) is then changed to the striking angle QGH, which is five degrees larger (25 degrees). Hence the aiming point should be one-half inch farther from the center of the first struck disk. Instead of two inches from center, it should now be 2½ inches from center.

Occasionally in some extreme cases a correction of as much as 10 degrees is possible, with a change of aiming point of one inch.

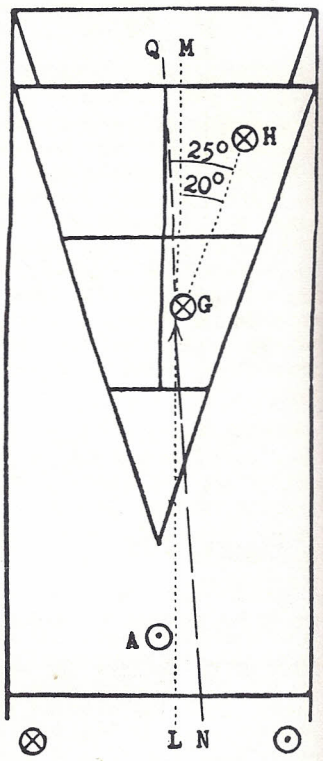

Figure 111

PART 61: HITS AND ANGLES (L)

Within the subject of hits and angles is the question of what happens when two or more disks that are in contact with one another are hit by another disk. It will require several articles to cover the main considerations of this subject.

DISKS IN CONTACT. The simplest situation is that of two or more disks which are hit by a disk that is moving along the line of centers.

In Figure 112a there are two disks A and E-1, just touching or nearly touching. A line JK is drawn through the centers of the two disks. A shooting disk is shot at the pair along the line JK and directly at the center of A.

This shooting disk C makes a full hit against A, as shown in Figure 112b. The force of the blow is expended directly along the line of centers JK of the disks. The striking disk C stops as it hits and remains in place (perhaps after edging onward slightly). The first struck disk A would move directly onward if it could, but it cannot because it lies directly against E-1, and it therefore remains in place (perhaps edging onward slightly).

The last disk E-1 receives essentially the full momentum of disk C and moves onward to E-2 along the extension of the line JK that passes through the centers of the disks, and it goes as far as C would go if there were no disks in its way. This is the same action as that of a single struck disk, as described in Part 52.

At the end of the shot, as shown in Figure 112c, there remain two disks in contact, C and A, while farther onward is the disk E-2.

THREE DISKS. In a similar way, in Figure 112d, there are three disks in contact, B, G and F-1, exactly in line, and a line LM is drawn through their centers. A shooting disk is propelled along the line LM directly at the center of disk B.

The same action occurs, and is shown in Figure 112e. Disk D stops as it hits. B remains in place, as also does G. And F-1 is driven onward to F-2, along the line of centers LM and as far as D would go if no disks were in the way.

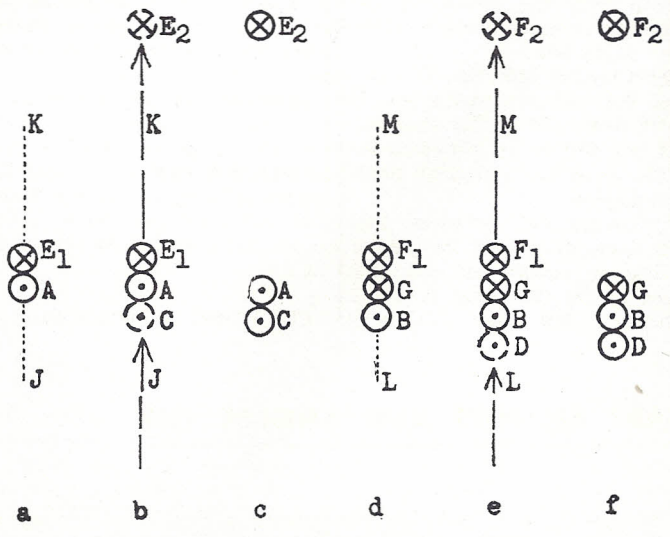

Figure 112

At the end of the shot, as shown in Figure 112f, there remain three disks in contact, D, B and G, and farther onward is F-2.

When several disks are almost but not quite in contact, being separated by intervals of one or several inches, the effect is much the same as if the disks are in contact. The difference is that the first struck disk moves onward across the short interval between disks before hitting and stopping against the next disk. Any intermediate disk, such a G in Figures 112d, e and f, does the same.

And the last disk still moves onward essentially as far as the shooting disk would go if there were no disks in the way.

PART 62: HITS AND ANGLES (M)

The action which occurs when a pair of disks in contact is hit by a striking disk moving along the line of centers was described in Part 61. The striking disk and the first struck disk remain together on the board while the farther disk is moved onward.

A related type of action, but also somewhat different, may occur when the striking disk is not initially moving along the line of centers but makes a hit at an angle.

ANGLE HIT. In Figure 113a there are shown two disks in contact, A and E-1, and a line JK is drawn through the centers of the two disks and extended. This line cuts the near edge of disk A at point S.

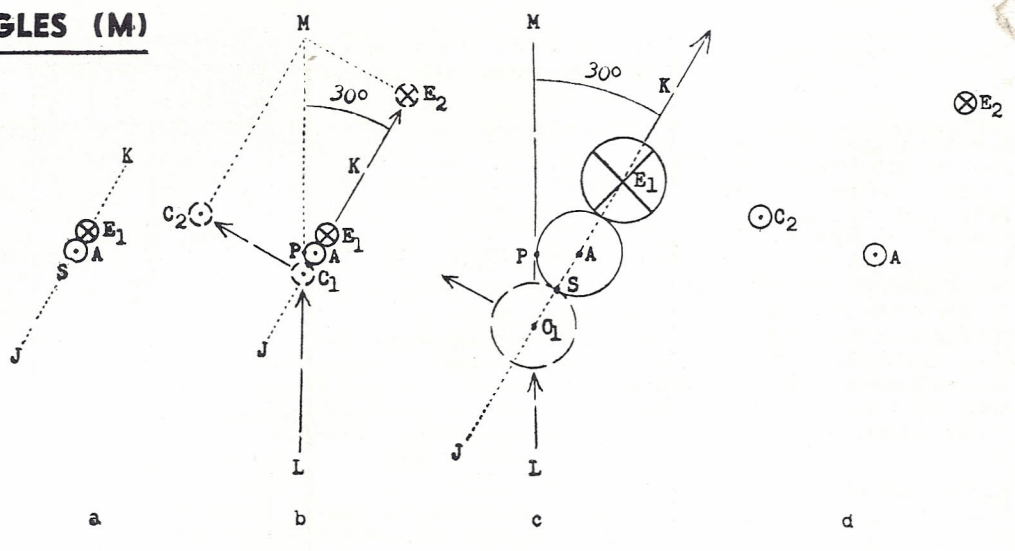

Figure 113

Continuing the situation, in Figure 113b and its enlargement Figure 113c, a shooting disk C-1 moving along the shooting line LPM hits disk A. The point of impact happens to be at S, which is on the extension of the line of centers. Disk C-1 is shown at the instant of impact, and its own center is also on the line of centers of the other disks, that is, on the line JK.

Most of the momentum of disk C is communicated to disk A at point S, with the direction of force along the line JSK.

The results are as follows. The momentum received by disk A tends to drive it along the driven line SK, but it is immediately stopped by disk E-1, is not able to move, and remains in place at A.

The momentum received by A is then instantly communicated to E-1. Disk E-1 is driven away along the driven line, that is, the line of centers extended JK, and moves onward to some point E-2.

The foregoing general results occur, whatever may be the striking angle which the shooting line makes with the line of centers, provided the point of hit is at S, in extension of the line of centers of the two struck disks.

GLANCE-OFF: As compared with the action described in Part 61, there is this difference. Disk C hits A at an angle, not full. It therefore does not stop in place against A, but glances off to the side along the glance-off line. This glance-off line, previously shown in Parts 53 and 58, is always at a right angle with the driven line.

The distance that C moves along the glance-off line to C-2 is determined by the striking angle (30 degrees in this drawing) and by the force of the blow, and the movements of both disks are in proportion to the distances shown in Figure 106 of Part 58.

The final result is that the three disks involved stop at points shown in Figure 113d, which should be compared with Figure 113b.

PLAYS. This play is used when it is desired that the first struck disk A remain in place.

The play also often occurs inadvertently when an attempt is made to clear the board of two disks in contact. The tendency is to hit the first disk at the point S, in line with the centers of the two disks. As in this case, the first struck disk remains in place and the play to clear the board is therefore a partial failure.

If it is desired to move disk A, it must be struck at some point other than S (in extension of the line of centers).

PART 63: HITS AND ANGLES (N)

Another case of disks in contact is shown in Figures 114, 115 and 116.

In Figure 114, the shooter Red has a disk A-1 in the kitchen, while the opponent Black has two scoring disks, E-1 and F-1, apparently in contact with each other and lying in one of the 8-areas. Thus the score which stands on the board favors Black by 26 points.

Having asked the referee, Red learns that the disks E-1 and F-1 are in contact. By sighting as well as he can without stepping on the adjacent court (Rule D-8), Red estimates that the extended line of centers of the two disks in contact runs directly to disk A-1.

PISTOL. When a pair of disks in contact is struck by another disk, the farther disk is driven away along the extension of the line of centers of the two disks in contact. And when, as shown in this case, the extended line of centers is directed toward another disk, those two disks in contact are like a loaded pistol pointed at that other disk as a target. Hitting the nearer disk discharges the pistol.

The shooting disk C must hit F-1 at such an angle as to force F-1 against E-1, and this will be effected at almost any angle except a very thin hit on the left side that might drive F-1 to the right without moving E-1. Thus almost any strong hit against F-1 will accomplish the purpose. And if it is a full hit disk C will stop in place as it hits, for an 8.

For this situation, in which it is desired to spoil both E-1 and F-1, the point of contact must not be at point S. Applying the case shown in Figure 113 of Part

62, if the shooting disk were to strike the first target disk F-1 of Figures 114 and 115 at S (in extension of the line of centers of the pair of pistol disks), that first struck disk F-1 would remain in place to score for Black, and this would of course be undesirable from the point of view of the shooter Red. (But if the situation were different and this were a red disk, a hit at S would save the red disk.)

SQUEEZED OUT. On the other hand, if the shooting disk C (Figures 115 and 116) hits F-1 on center or a little left of center instead of at S, disk F-1 tends to be forced onward, but it strikes or presses instantly against E-1 at an angle so that it glances to the right to F-2. It may be said to be squeezed out to the side.

HITS TARGET. Most of the momentum is communicated through F-1 to E-1 and discharges the pistol, driving E-1 along the line of centers of F-1 and E-1 and onward toward the final target A-1.

If the force of the original hit is sufficient, E-1 will hit A-1 and drive it from the kitchen. And if the hit against A-1 happens to be a full hit, E-2 will stop in the kitchen for a 10-off for Black.

At the end of the shot the disks on the board are: C for an 8, E-2 for a minus-10 and F-2 on the edge of the board.

In this particular play, the gain for the shot is 44 points.

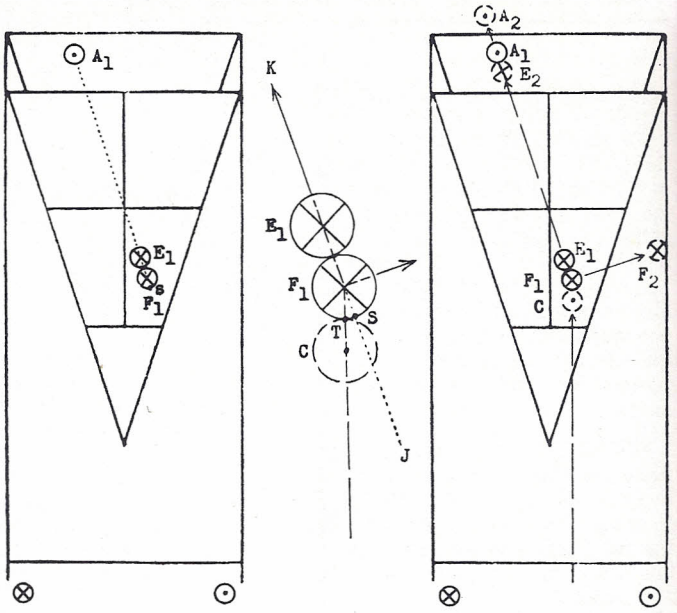

Figure 114 Figure 115 Figure 116

PART 64: HITS AND ANGLES (O)

A case of disks in contact which is somewhat similar to that shown in Part 63, and yet has some differences, is shown in Figures 117, 118 and 119.

TOURNAMENT CASE. In the Fun 'n Sun Tournament, at Clearwater, March 8, 1954, the shooter Red was faced at his last-shot with the situation shown in Figure 117.

The opponent Black had three scoring disks on the board, E, H-1 and G-1, which would score 22 if left there. A non-scoring disk A was also on the board.

It is noted that a line through the centers of H-1 and G-1 and extended onward would be parallel to the center line. If Red made a full hit on H-1, his shooting disk would backstop against H-1 for a score, and G-1 would be knocked away. But disk H-1 as explained in Part 61, would also remain in place for a score for the opponent.

But if the shooter were to use an aiming point P at the left edge of disk H-1 (Figure 118), the hit against H-1 would have a striking angle of 30 degrees, and, as shown in Figures 118 and 119, disk H-1 would be squeezed out to the right and perhaps driven off the board.

The shooter played his shooting disk to hit H-1 at an angle, and he also modulated the speed of the shot so as to put disk G-1 in the kitchen.

The shooting disk D hit H-1 on the left side, being at D-1 at the instant of impact and then glancing off to the left to D-2, along a line at a right angle with the line of centers of the disks D-1 and H-1. H-1 was squeezed out to the right to H-2, along a line at a right angle with the line of centers of H-1 and G-1.

Finally G-1 was driven onward into the kitchen at G-2.

The play was entirely successful, except that disk H was not pushed hard enough to the right to leave the scoring area and remained on the board for a 7.

Gain for the shot: 24 points. Score for the frame: Red 7, Black 5.

GENERAL. Enough has been shown in the examples of disks in contact to enable a player to apply the same principles to other cases. In general, it should be repeated that:

The last disk is driven away along the extension of the line of centers of the last two disks of the set-up.

The first target disk stays in place if the shooting disk hits at S, on the line of centers of the original pair. Otherwise, the first target disk is squeezed to the side, and moves on a line perpendicular to the line of centers of the original pair of disks.

The shooting disk stops at impact if the hit is full. Otherwise it moves off on the glance-off line, which is perpendicular to the line of centers of the shooting disk and the first target disk at the instant of impact.

If there are three disks concerned in the initial set-up, the solution can be worked out by studying the action of one disk against a second, then the action of the second against the third, etc.

If the disks are not in absolute contact, but almost so, the action is approximately the same. If the disks are several inches apart, it may be necessary to make allowances for diagonal movement of a disk as it moves to impact with the next disk.

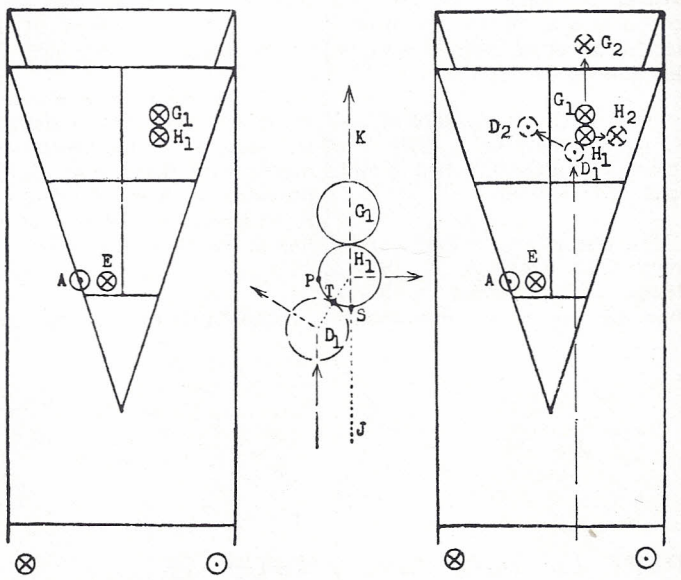

Figure 117 Figure 118 Figure 119

PART 65: BUNT (A)

When a friendly disk lies at the outer edge of a scoring area, it is frequently possible to bunt (or bump) it into the scoring area.

The play generally requires accuracy of direction and delicacy of touch in order to strike the disk at the correct angle and also to tap it with just enough force to move it the desired distance

EXAMPLES. In Figure 120 there are initially three disks, A-1, B-1 and C-1, lying on the diagonal side lines. Disk D is shown as being shot at each one, which is thus bunted into scoring area. A-1 is bunted to A-2; B-1 to B-2; C-1 to C-2. The three choices are presented for study.

In the case of A-1 or B-1, the shooting disk remains in place at D-1 or D-2 as it hits, and thus forms a single-disk guard protecting the bunted disk. In order for such a single-disk guard to afford good protection, the bunt must be straight ahead. If, on the contrary, the bunt is diagonally to the side, as so often occurs, then the bunted disk is partially or wholly unprotected, depending upon the extent of the sideward movement

In the case of C-1, the bunted disk stops under the protection of a double guard composed of disk A-1 and the shooting disk which stops at D-3. In this case the bunted disk is slanted a little to the left so that the disk can stop under cover of the double guard

After a bunt, if the bunted disk stops close to the guard, it can be spoiled by knocking the guard against it. If the bunted disk is tapped farther away, there is more difficulty in keeping it in line so as to hide it beyond the guard, hence the disk is more liable to be in the open.

AFTER FILL-IN: Bunting is particularly applicable in the frequent case shown in Figure 121. The shooter Red has initially placed a cross-guard at A-1, whereupon the opponent has filled-in with E between A-1 and the point of the triangle in order to prevent the shooter from passing through that gap to hide a disk in the area beyond A-1. (See Parts 36 and 37.)

In this case, it is often well to bunt disk A into scoring area, as at A-2, leaving the shooting disk at B, where it forms a double guard with E to protect A-2.

The shot should be planned so that the shooting disk B will not glance too far to the left, and thus leave a gap between B and E through which the opponent can shoot to spoil A-2. Such a gap

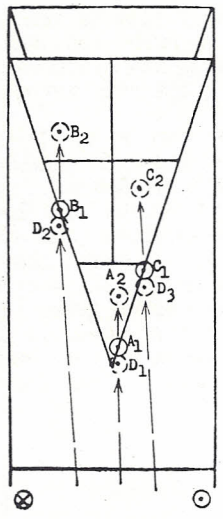

Figure 120

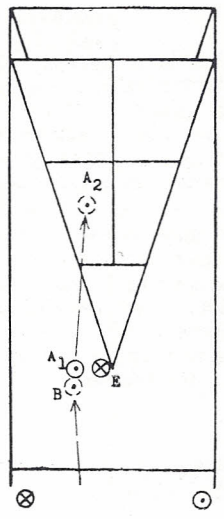

Figure 121

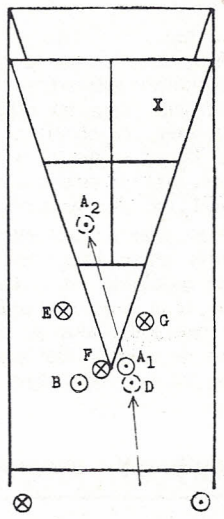

Figure 122

is liable to occur if A-1 is not initially close to E.

NEAR END COVERED. In the situation shown in Figure 122, practically the entire scoring area is covered by a group of disks E, B, F, A-1 and G, distributed across the court at the near end of the triangle. Aside from a possible kitchen shot, or a shot for simple score to about point X, the shooter Red is practically limited to a play to bunt A-1 into scoring area, as at A-2. At that point it is protected by a number of disks.

OTHER BUNTS. A shot to put an enemy disk in the kitchen is usually in the nature of a bunt, and is discussed under the general subject of "Kitchen."

An especially interesting case of a bunt played by Amy Close to win a game was described under "Unusual Shuffle Shots" Nov. 3, 1957.

PART 66: BUNT (B)

Another bunt is shown in Figure 123. Initially only disks A and B-1 are on the board. B-1 was put there by Red in an attempt to hide it beyond A. It is again the turn of the shooter Red and the opponent Black will have another turn afterward.

Red plays to bunt B-1 onward to B-2. If the shot is accurate, the shooter leaves his scoring disk B-2 protected by a double guard composed of A and C, and it should be extremely difficult for the opponent to spoil B-2.

ACCURACY. Good protection is afforded to a bunted disk if the bunt is accomplished, as in Figure 124, in such a way that the disk A-2 stops on the extension of the line LB which is drawn from the middle of the opponent's starting area, and at a distance of about five or six feet from B, so that the opponent will not have an easy shot to knock B against A-2.

To tap the bunted disk to a desired distance with accuracy is about as easy as to reach a desired distance with a shot for simple score.

But if the shooting disk B diverges an inch to right or left of the proper aiming line, the disk A-1 will be driven diagonally to the left or right and off the extension of the line LB by 10 inches if it is driven five feet, or by six inches if it is driven three feet. It will thus be completely or almost completely exposed to the opponent.

In order to reduce the angular error or divergence and the consequent amount of exposure, bunts are most often made to short distances, such as two to four feet.

Thus the value of a bunt to produce a protected disk is reduced by the requirement of high directional accuracy in

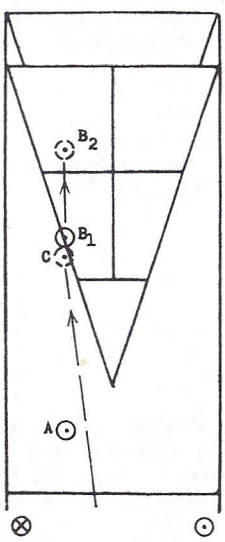

Figure 123

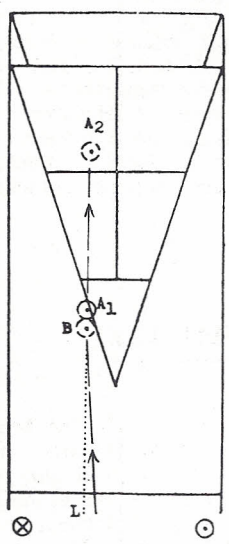

Figure 124

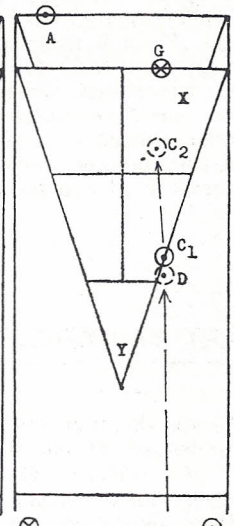

Figure 125

shooting.

For this reason, a bunt is often undesirable when the bunted disk will have no other protection than the shooting disk after the latter stops at impact, and under these circumstances this shot is not greatly used.

However, a bunt shot may be useful when there is no better play available, as in the seventh shot of a frame and some sort of last-resort play is needed. In such a case a well-played bunt may be very effective, since the opponent may have to spoil it, and if it is fairly well hidden he may not be able to score with his shooting disk after hitting it.

TOURNAMENT PLAY. In the final of an important statewide tournament, Carl Spillman, topmost all-time shuffler, was playing against another of the top-level all-time shufflers, with a score of 32 to 59 in his favor in the third and deciding game.

At the seventh shot, to be played by Spillman, there were three disks on the board, C-1, G and A, as shown in Figure 125.

The chance of hiding a disk deeply in the 7-area at X, in the extreme right-hand corner of the board, was not inviting because of the smallness of the area and the nearness of the kitchen.

The most usual play in the situation would be a high 10 to Y, a shot that might be somewhat suitable, although it would carry the certainty that his opponent, who was far behind in the score, would try to put him in the kitchen, and might succeed.

A third possibility, and the one adopted by Carl, was to bunt C-1 into scoring position at about C-2. This had the advantage that, in case the play were well executed, the opponent would be led to shoot at it without much chance either of putting it in the kitchen or of scoring against it.

The bunt was played, and disk C-2 was partly hidden.

The opponent could hit C-2, and shot to do so, but happened to miss it completely. The score was then recorded at 32 to 66.

PART 67: KITCHEN (A)

The 10-off area, or kitchen, lying across the width of the board, is a constant danger to both the shooter and the opponent. The area is broad from side to side, five to six feet, but is relatively shallow from front to rear, measuring 18 inches between centers of lines, which is further reduced in effective depth when the lines are considered as being seven - inches wide, as explained in Parts 12 to 14.

It is not easy to strike an enemy disk with the right force to make it stop in the kitchen. However, in a large proportion of the plays when there are enemy disks on the board the kitchen should be considered with reference to two ideas, first, so as to avoid causing or allowing friendly disks to be put in the kitchen or kept there, and second, so that enemy disks may be knocked into it or kept there.

Playing for the kitchen is an established and essential part of the game. Yet there are some players who adopt the childish attitude that it is mean and unfair for opponents to knock their disks into the kitchen. We know that most shufflers make such remarks jokingly, but there are some who harbor a spirit of real resentment. It is hoped such persons will overcome their unsportsmanlike attitude.

KITCHEN SHOTS. The idea of putting an enemy disk in the kitchen should be considered in many plays, though not always adopted and used. In many a shot at an enemy disk it will be possible, without changing the main purpose of the play, to modulate the direction and force of the shot to increase the chances that the enemy disk will stop in the kitchen.

Thus, as in Figure 126, when an enemy disk H scoring an 8 is to be knocked away, and an 8 is to be scored against it as a back stop (with a gain of 16 points for the shot), it is an obvious advantage to add a further gain of 10 points by also putting the enemy in the kitchen. Of course, there are reservations, as will be seen later, concerning the advantages and disadvantages of such shots.

The percentage of success with kitchen shots varies greatly with the skill of the players. Experts average about 25 per cent or about once in four shots. This percentage is based on a record of 385 kitchen shots in tournament play, including long and short shots. Less skilled players will of course succeed less often.

Although the percentage is not high, yet by repeatedly attempting such shots when suitable occasions present themselves, the successful percentage of such shots may well attain a scoring effect that is valuable and perhaps decisive in the game.

Inexperienced shufflers tend to avoid this type of shot because their percentage of success is low, not realizing that the percentage is not high even for experts. They should be encouraged to make repeated attempts.

On the other hand, some shufflers even make kitchen shots their preferred choice for almost all occasions, and constantly make the kitchen the principal objective of every shot whenever there is an enemy disk available as a target. This is believed to be excessive and unsound.

As a principal target area, the kitchen is too shallow to be sufficiently remunerative. Also the objective of the game is to gain the 75 points needed to win the game, and only incidentally to cut down the opponent's score.

One who has been national champion several times is reported to have expressed his idea as follows: "A kitchen shot is a wasted shot. I don't shoot for the kitchen unless I am forced to do so, for example, when I am about 10 points behind in the score."

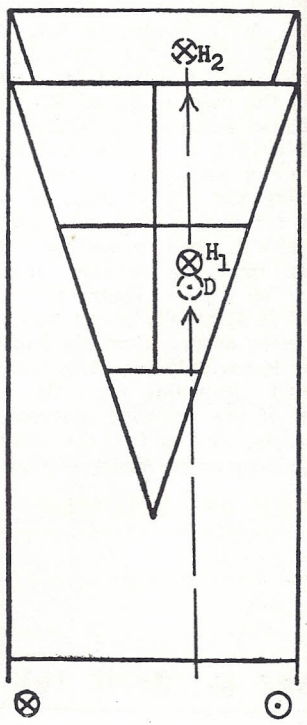

Figure 126

PART 68: KITCHEN (B)

As was shown in Part 52, when it is desired to put an enemy disk H-1 (Figure 127) in the kitchen with a straight shot, the shooter should aim at a point P in the kitchen on a line directly over the center of the target disk H-1. The force to be used is that which would be necessary to put the shooting disk in the kitchen. The shooting disk D will stop when it hits, and the target disk will go on to the kitchen at P (H-2).

Thus, if a shuffler is able to put his own disk in the kitchen (and we are all sure we can do this), he should be able to shoot with the same force and put his opponent's disk in the kitchen.

When the distance of the target disk from the kitchen is small, the greater is the probability of success in putting it in the kitchen. Against a disk in the seven-area or on the near edge of the kitchen, the chances of success are usually the best.

STRAIGHT SHOT. As explained above with Figure 127, the straight shot is a simple way to put a disk in the kitchen. It is entirely suitable for the last-shot of a frame, when the opponent will have no further turn.