Basketball Recording Manual

by

J. W. Carow

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How the System was Developed.

Like many other more or less complicated products of the mind, this system was built up from a simple beginning, and was wholly a labor of love.

The respective merits of our players came in for spirited partisan discussion. There was no agreement on who was the most valuable player, who lost the games, where the weakness of the team lay, etc.

For our own amusement and satisfaction, we tabulated a few games, recording the goals made and the shots missed. These tabulations were illuminating and surprising. They settled many disputes and showed up faults of some of the best players. Until these tabulations were made, partisans would not believe that the percentage of goals was so low.

We then sought to discover what caused the large percentage of missed shot. To do so, we divided the shots into long and short, using the foul line distance as the unit. Soon these tabulations came to the attention of the coach and he commandeered them. The shooting of the players was so greatly improved by showing them their faults in black and white, that we concluded it would be even more helpful to show who assisted in making the shots. So a column was added for "assists." Then, as the games went on, we added columns calling for held-balls, out-of-bounds, etc. We also, at this time, tried to determine who had the most endurance, and so divided the table into five minute periods. This expedient of showing how long a boy kept going at top speed enabled the coach to work his substitutes properly and was the means of winning several games.

By this time our table became so long and complicated that we could not follow the game and tabulate the plays. The situation demanded some way to take down the plays as made. After a little study, we evolved a simple system of basketball shorthand which solved the problem, and enabled us to record every play. From this code it was an easy matter to fill out our table.

Prior to the invention of the code, it had been impossible to record any assist, except the last before the shot. Now all assists were recorded and could be tabulated. Before, the course of set plays had to be remembered; now they could be followed from the tip-off; also how and when they were broken up could be determined. It was now a simple matter to extend the table to cover any feature of the game desired. After one game, the coach wanted to know how many fumbles were made and who was guilty. Although fumbles were not accounted for in the table, it was an easy matter to go over the shorthand notes and give him the information. A column was then added to the table to show fumbles. As the games went on, we added columns showing other features of the play, such as shots-received-from-our-board and from-their-board, ball-received-from-out-of-bounds, ball-thrown-out-of-bounds, passes-intercepted, etc.

As soon as we began to tabulate the plays, we reduced the totals to percentages. This was necessary for a good understanding of the plays and a great aid to the coach in his chalk talks. Percentages, curiously enough, tell an entirely different story than numbers. Tell a boy that he made 31 errors out of a total of 92 plays and he will not be greatly impressed, but show him his relative standing in a percentage column and he is interested at once.

At first we confined ourselves to taking percentages of goals only. As the table grew, it became plain that goals alone did not tell the whole story. It is obvious that the goal per-

centage of a standing guard will not show up very well. Again, many of the teams are built around an excellent shot, and he gets all the credit in the goal percentage column. As the code showed every play, it was possible to work out percentages showing each man's value to the team and taking into consideration not only goals made, but all other plays as well.

To work out these percentages, it was necessary to assign certain values to each play. In determining these values we consulted many basketball authorities, who kindly gave us their ideas. It was finally decided in high schools to give a credit of four points to field goals, two to goals from fouls and one to all other plays; to charge two points against a player for fouls and one for all other errors. For more expert teams, three points were credited for field goals. The total of credits and errors were determined and the percentages computed. These percentages, we thought, showed the team play standing of each man. When we had arrived at this point, we confidently supposed we had at last discovered how to give each player credit for his every play—how to determine just what each man was worth to the team. We reckoned without the clever boy. Things went well for a few games, when suddenly a guard began to appesr at the top of the percentage column. He was a good player, but plainly not the best player. We wondered what was wrong with our system and began to watch this guard. He had studied the system carefully and gone out to beat it. He would not get into any play where he was likely to make an error. He played for the credits. We interviewed him and confirmed our suspicions. The solution was obvious. We had to take into consideration the player's activity—his willingness to get into the game. When this was done, the *relative efficiency* of the players and another percentage column was the result. Our guard's percentage now dropped to the bottom of the relative efficiency column only to parallel his position in the credits percentage column when he got back into the play.

Some boys cannot visualize figures, and sets of percentages make no appeal. All boys, however can understand a graph. Graphs were therefore prepared covering every phase of the play, and were continued from game to game. Great interest was shown in these graphs and all the boys fought to *make that line go up.* One player was much hurt because he was not at the top of the percentage column, a position he really deserved and later occupied. He was the most valuable man on the team, but nevertheless a very poor shot; a special graph was prepared for his benefit, showing that the line of goals *made by the team* paralleled his "assists" line, rising when he assisted and dropping when he shot. His team play improved at once and he perfected his shooting by hours of practice.

Graphs will often put the idea across where nothing else will avail.

The System

In basketball, as in every other sport, it is essential that a record of the play of each member of the team be kept. With the record in black and white so that reliance upon memory is eliminated, the team may be handled with fairness and accuracy.

Every coach knows that after the game, his men cannot remember with any great exactness just how they conducted themselves during the game. Each man will assert with great earnestness that he did not try a long shot, that he did not fail to get the ball on the tip off; that he lost no held balls; that he did not throw the ball out of bounds; that no set plays failed through his fault; that he did not loaf, etc., and without an accurate record of each play it is impossible to convince him that he is wrong.

The coach who must rely on his memory, is often in difficulties with his men. A record of the play enables him to correct the faults of the men and to check up on their plays without losing their confidence.

Many a team has been wrecked because a coach could not substantiate his criticisms. Many a seemingly brilliant team has failed to come up to pre-season predictions because some spectacular player has unwittingly thrown the games away on long shots, failing to assist instead of shooting, etc. In each case, a tabulation of the plays in figures would have put things right.

Every coach can call to mind dozens of situations which cried loudly for figures, with none available.

We call to mind a team with two especially brilliant men on it. One was a good short shot; the other a poor shot. The poor shot liked the acclaim of the crowd and would shoot every time he got a chance. The tabulations of the plays showed that when the poor shot *assisted*, the team won, and when he *shot*, the team lost. He was shown the graphs of the team scores and his play. He immediately began to assist the good shot and the team percentage climbed.

Another "forward" would not believe that he took unnecessarily long shots. The figures convinced him and he became the best scorer on the team.

A captain would not believe that he loafed in the last quarter, and resented being taken out. The figures put him right and greatly improved his play.

The discussion of a game with every play before the team has a wonderful effect upon the future play of each man. He can visualize his faults and can much more easily correct them. A percentage column is a great incentive to good play.

At first thought it seems difficult, if not impossible, to keep a record of every play. This is not the case, however. Anyone can do it after a little practice. Like anything else which is worth while, one must give the matter some thought and work.

It is only necessary to learn a short code—a system of basketball short hand, the rest is routine. With this code each play is put down as it is made and the plays are then tabulated. The code is simple. It is so designed that the play is suggestive of the symbol which stands for it. Initials instead of numbers are used to designate players. The numbers on the men cannot always be seen and the players' names suggest the initial.

The Code

⊕ = ball goes up in center.

A, B, S, L, etc. = the initials of the players.

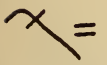
H = held ball.

O = out of bounds.

= connects the player with the play where necessary.

= long shot missed (over 15 feet, i. e. beyond the foul line.)

= short shot missed. Rebound from board in each case shown by bringing up end.

 = long goal.

= short goal.

= dribble.

fu = fumble.

— = opponent's ball, one mark for each movement of ball.

= foul. = foul by opponent.

= foul by home player, S. = foul by S and shot missed. = foul by opponent and goal made by B. Use also the letters T, P and D P for technical, personal and double personal fouls.

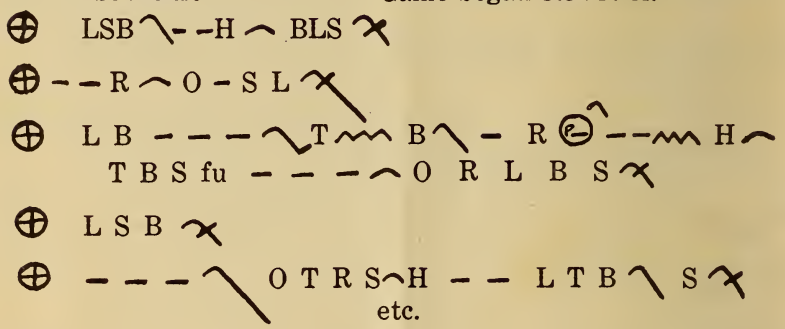
When a substitute is put in, show where and when he began play and for whom substituted.

The Play in Code

LADYSMITH vs. RICE LAKE LADYSMITH, Jan. 15, 1922.

Bliffert, R. F.	equals	B	
Sawyer, L. F.	"	S	
Lee, C.	"	L	Referee, Jay.
True, R. G.	"	T	Umpire,
Reik, L. G.	"	R	Time Keeper, Riordon.

1st Half. Game began 8:32 P. M.



Explanation of Play as Shown by Code

Lee tipped off the ball to Sawyer, who passed it to Bliffert. The latter missed a short shot, which did not hit board or go out of bounds. This was a set play. Opponents got ball and passed it once when Bliffert won a held ball and tipped it to Lee, who passed it to Sawyer, and he scored a short goal.

Opponents center got tipp-off, but Reik intercepted the pass and carried ball out of bounds. Opponent's ball. Sawyer intercepted the throw in and passed to Lee, who made a long shot for goal.

Lee tipped off to Bliffert; opponents intercepted his pass and after two passes, missed a long shot, which hit board. True got ball on rebound and dribbled, then passed to Bliffert, who missed a short shot and it was recovered by opponent. Reik intercepted pass but opponents made single personal foul, Sawyer missed the shot from foul and ball recovered by opponent. After two passes, they dribbled and ran into a held ball by True, who tipped ball to Bliffert. Bliffert passed to Sawyer, who fumbled, etc.

It is now easy to tabulate the play and figure the percentages.

In tabulating the play, check off the long misses first, then the short misses, etc., through the table, column by column. This method is easier than to carry all the columns along together.

It is perhaps unnecessary to call attention to the fact that there are two kinds of held ball and intercepted passes, a won and a lost, and that there is a rebound from two boards. An assist is credited when the ball is passed to a team mate, except when the ball is (a) put in play from out of bounds, and (c) tipped off. These plays are "assists," but are credited in separate columns as it is essential to tabulate thems eparately. Therefore, do not duplicate by putting them in the assist column. Of course, these special columns may be eliminated and all accounted for in the "assist" column if desired.

The "credit" or "debit" to which each play is entitled depends somewhat upon the expertness of the team. It has been suggested that a goal should count three (3) and every other play one (1). This works out all right for college and professional teams but it penalizes shooting in high school and amateur teams. In the latter class, the goals from field should receive a credit of four (4), goals from fouls two (2), all other plays, one (1). Missed fouls should be debited two (2), all other er rors, one 1).

When a player is shooting 33 1-3 percent, he is making every third shot. If he gets three credits on each goal and one debit on each miss, he profits by shooting. If, however, he is shooting 25 percent., he plays even, but if he is shooting 20 percent., which is by far more common, he is actually penalized for shooting, because he then gets a credit of three (3) and a debit of four (4) for every five shots.

Computing Percentages

Any percentage which is desired may now be figured. It is suggested that the following percentages be computed: (a), long goals to total shots; (b), short goals to total shots; (c), goals to total shots; (d), team goal percentages, (e), credits to total of credits and errors, and (f) relative efficiency.

It may appear at first glance that the figures which show the percent of credits to total of credits and errors represent the efficiency of each player. This is not the case. As the number of plays a man enters into increases, his credits percent. decreases. This is also true in baseball or any other sport and is the reason why a man is not given a standing in other sports until he has played a certain number of games. If now, a basket ball player plays for this credits percentage, he can increase it by loafing and making plays only when his chances are good for getting a credit. To take care of this and determine a man's actual efficiency, it is necessary to figure in his *activity*. Obviously this cannot be done play by play. It is, therefore, necessary to take the average of all *plays* made by the team and compute the man's *activity* from this. For instance, the total plays made are 500; the average is 100. If our man makes 89 plays, his activity percentage is 89. When his activity percentage is multiplied into his credits percentage, the result is his *relative* efficiency. Suppose this man's credits percentage is .728, then his relative efficiency is .728x.89 or

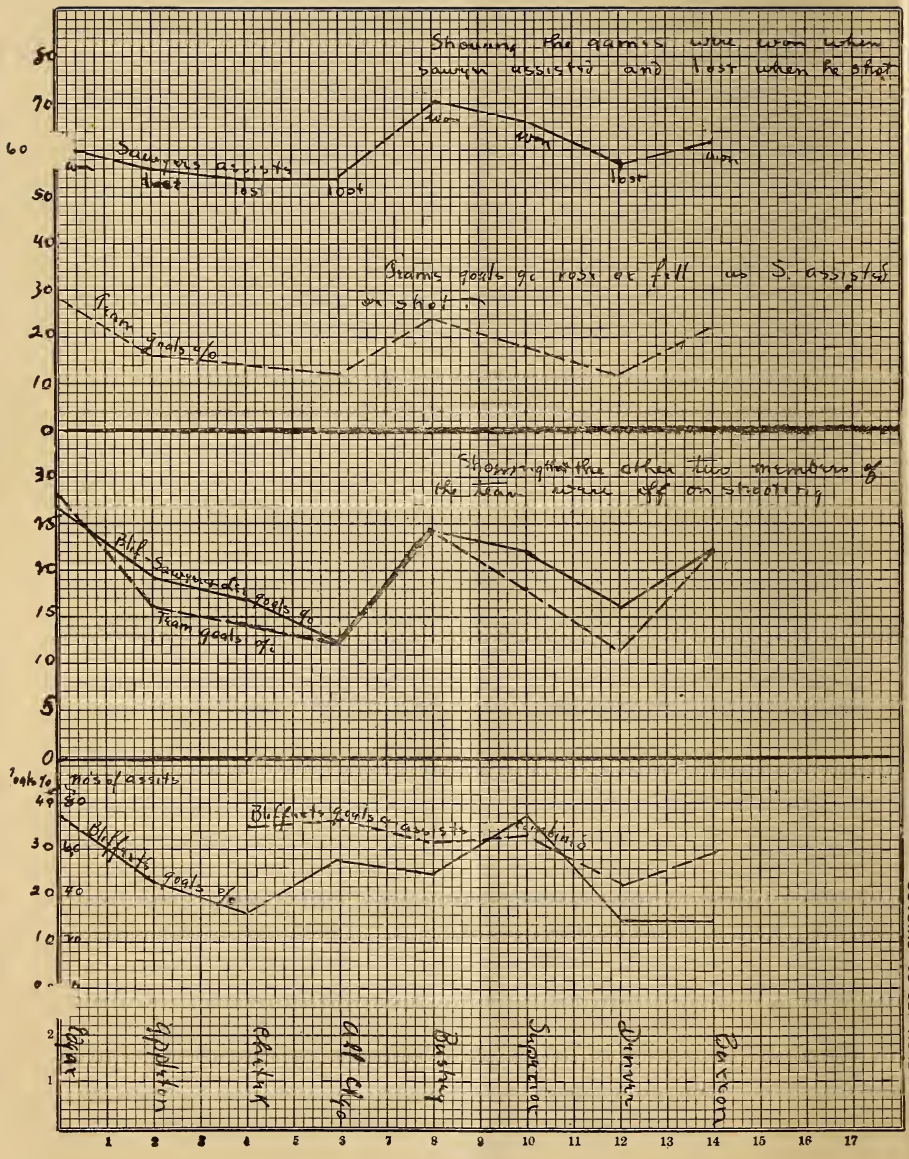
.648. If, however, his activity percentage is 1.10, then his relative efficiency is .801.

Please notice that this last figure is his *relative* efficiency and therefore may be more than 1.000. Explaining, if a man's credits percentage is .90 and he made 115 plays as against an average of 100 plays, then his relative efficiency is 1.035. This, of course, will seldom happen.

Compute a substitute's activity by giving him credit for the rest of the game at the same rate of play: That is, if the substitute plays ten minutes, multiply his scores, credits, debits, etc., by four.

Graphs

In order that the men may visualize their play, it is advisable to make graphs of the percentages, showing the graphs of long and short misses and goals, of the assists of each player as compared to the goals, of the relative efficiency as compared to the credits percent. and other graphs as desired. If these graphs are continued as the games progress, a wonderful stimulus to good play will result.



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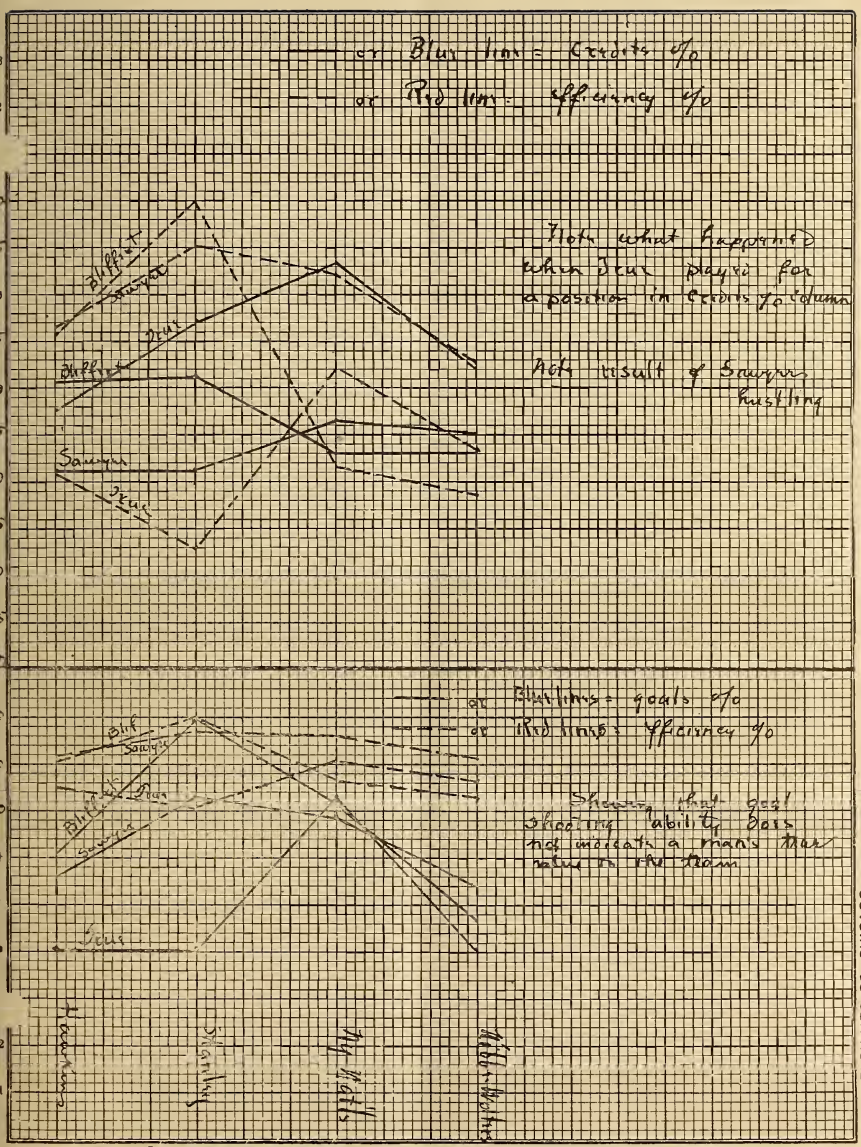

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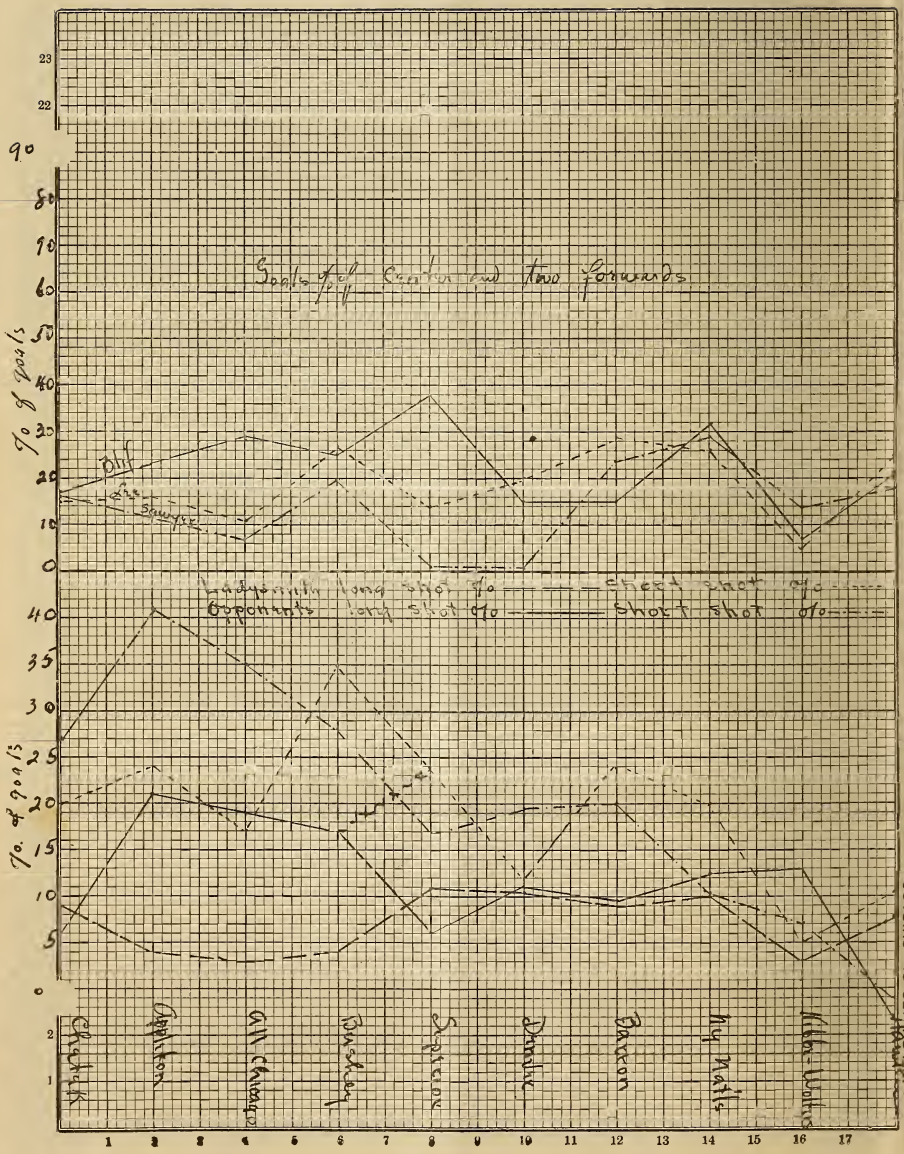
Goals of Center and two forwards
% of goals
Blif
Sawyer
Ladysmith long shot %
Short shot %
Opponents long shot %
Short shot %
% of goals
Chatuk
Appleton
All Chicago
Bushey
Superior
Dunbar
Barron
Ny Nat'ls
Nibbs-Wolters
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Home Players	Halves	Goals		Misses		Intercepted Passes		Held Ball.		Assists	In from out of Bounds	Put out of Bounds	Fumbles	Received Ball From					Tip off	Fouls			Shots from Fouls		Total		Goals %	Total		Credits %	No. of Plays	Activity %	Relative Efficiency	Goals from			Missed Shots		
		long	Short	long	short	Won	Lost	Won	Lost					Center	out of Bounds	Held Ball	off Board Theirs	off Board Ours		Personal Single	Personal Double	Tech.	Goal	Miss	Shots	Goals		Credits	Errors					Out of Bounds	Held Ball	Center	Out of Bounds	Held Ball	Center
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