

A STUDY OF THE EFFECT OF THE 30-SECOND CLOCK
ON TOTAL NUMBER OF SHOTS TAKEN AND THE RELATIONSHIP
BETWEEN SHOTS TAKEN AND POINT DIFFERENCE

by

BRADLEY A. RUMBLE

B. S., Fort Hays Kansas State College, 1975

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Health, Physical Education and Recreation

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1977

Approved by:


Major Professor

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ACKNOWLEDGMENTS

I wish to express my appreciation to Associate Professor Raymond A. Wauthier and to Dr. Larry Noble of the Department of Health, Physical Education and Recreation at Kansas State University for their professional guidance and time and effort throughout this study. Grateful acknowledgment is also expressed to Mr. Brice Durbin, Executive Secretary Designate, National Federation of State High School Associations, for allowing me to use his available information on the 30-second clock. Also the writer thanks Larry Linenberger for his advice and encouragement which aided the completion of this report.

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Chapter 1

INTRODUCTION

Since the invention of basketball by Dr. James Naismith in 1891 new ideas for the betterment of the game have come and gone. Rules have increased in number and are constantly changing to keep up with the game's fast moving pace. Fundamental principles are essentially the same now as when Naismith proposed them. Many of the rules governing the application of those principles have undergone extensive amplification and modification during the process of evolution from the crude beginning to the present polished, spectacular, and most popular of all team games.¹

Several people had a great influence on Naismith during the formative years. One man in particular, Dr. Luther Halsey Gulick, confronted Naismith to discuss the construction of a set of rules and changes. With his help the first rule changes were reviewed in 1893. Not until January 1, 1894, did the first official rule book, a Spalding Official Guide, become published and made available to the public.

The thirteen original rules, as drawn up by Naismith together with certain advice from interested parties, were published by the Triangle, the school newspaper of Springfield College, on January 15, 1892. These rules dealt with advancing the ball and fouls.

Many rules were put into effect several years later. The dribble rule, for example, underwent several changes. In 1898 the

dribbler could use only one hand, but in 1899 the dribbler could alternate hands. From 1901 to 1908 the dribbler couldn't shoot. Over 100 rule changes have made appearances in rule books since the game became popular in the early 1890's.

Understandably the rule changes are too vast to list. One means of evaluating these rules is by the success of the game. Obviously the rules are a positive factor and a definite benefit to the entire game. Even today college basketball has concerned itself with improving and enhancing the game. One isolated example of a rule change is the 30-second clock. The 30-second clock is a relatively new experiment and has been tried on a limited basis.

Only a small percentage of schools have actually tried the 30-second clock, thus the data is limited. Accurately assessing complete advantages or disadvantages is difficult for that reason.

The Atlantic Coast Conference has talked of the 30-second clock. This conference, rich in basketball tradition, is pondering the adoption of a 30-second clock. One reason for the possible change is the boredom associated with watching and playing against the "four corners" delay game.

"The more I see of the four corner, the more I see a rule change. I'd definitely like to see a 30-second clock," commented North Carolina State basketball coach Norm Sloan. "The four corner reminds me of a bean bag game on the playground."

Reasons for implementing the 30-second clock may vary. Some feel that the 30-second clock will keep the game more exciting, both for

the player and the spectator, by forcing both teams to shoot the ball more often. Others feel it can be used as an equalizer as the team with a considerable height advantage will be forced to cater more to the smaller man's game. The team with a sizeable height advantage will exploit a smaller team's weakness which is rebounding. On the other hand a smaller team will try to wear down or tire the taller foe by fast-breaking. Whatever the reason or reasons for employing the 30-second clock the fact remains it is one topic of consideration.

In 1972 the Big Eight Conference initiated the use of the 30-second clock on all conference basketball games. A five-year study was conducted from 1971-1976 to see if the 30-second clock affected team scoring averages.

Many coaches feel the need for improving the game of basketball. The enactment of the 30-second clock is just one possible method of upgrading the sport.

No published material on the 30-second clock is available. All information pertaining to this study was taken directly from the Big Eight home varsity basketball games involving Kansas State University.

The data provided by the Big Eight Conference along with the data acquired from other sources will show the significance of the 30-second clock.

PURPOSE OF THE STUDY

The purpose of this study is to: (1) determine the effect, if any, of the 30-second clock on the total number of shots taken; and (2) to determine the relationship between the point difference and number of shots taken for all home Big Eight Conference games during the 1975-1976 basketball season at Kansas State University.

LIMITATIONS OF THE STUDY

This study has a few weaknesses. The author of this study did not gather data on all Kansas State University basketball games. Data was not gathered from non-conference home games. This study did not record data pertaining to the types of defenses used and the length of time the defenses were employed.

Conditions of the study permitted data to be kept only on the number of shots taken and the length of each offensive possession.

DELIMITATION OF THE STUDY

The scope of this study included all seven home Kansas State University Big Eight Conference basketball games for the 1975-1976 season. The author reviewed data available on the 1974-1975 basketball season which used the 30-second clock. Results from both seasons were compared.

DEFINITION OF TERMS

Point Difference--the point spread between two comparable basketball scores.

30-Second Clock--a time clock manufactured by Naden Industries of Mason City, Iowa. During a basketball game two clocks were used. One clock was placed at one end of the court and another was placed at the opposite end. The clocks showed the offense the amount of time remaining of the allotted 30 seconds in which a shot had to be taken. If the offense failed to shoot before the 30 seconds expired a horn was sounded. The sound of the horn was different from the horn used at the scorer's table. The ball was turned over to the other team at the sound of the horn.

Offense--the team in possession of the ball.

Offensive Possession--the length of time a team has the ball in front court.

Front Court--one specific half of the basketball court the offense uses when attempting to score.

End of Possession or Control--(1) when there is a try for a field goal;
(2) when opponent gains possession of the ball.

Four Corner Delay--a slow down tactic commonly known as the stall. A player is stationed in each of the four corners in the offense end of the court. The object is to spread the defense out and allow time to elapse off the time clock.

Fast Break--when a team takes possession of the ball on its defensive end of the court and tries to advance the ball to its offensive end of the floor and score a quick basket before the other team can get back to prevent the score.

Chapter 3

METHOD OF STUDY

The procedures implemented in this problem provide few guidelines. To work with the problem, the author of this report used several techniques to accomplish the task of studying the significance of the 30-second clock.

Briefly, these techniques consisted of the following: 1) the investigator observed and recorded all pertinent information from the press box at Ahearn Fieldhouse; 2) recorded all data on forms provided by the Big Eight Conference; 3) data included the length of all offensive possessions timed by stopwatch which were noted by being placed in either the 0-10, 11-20, or 21-30 second category. Any offensive possession lasting longer than 30 seconds was placed in the 21-30 second category; 4) comparable basketball scores were taken from the 1975 season in which the 30-second clock was used and from the 1976 season which did not use the 30-second clock to find a similar point difference; 5) recorded, studied, and analyzed all data collected for its use in this report.

Chapter 4

RESULTS AND DISCUSSION

The raw data, means and standard deviations for shots taken and point difference for 1975 and 1976 are given in Table I.

TABLE I

	1975		1976	
	Shots Taken	Point Difference	Shots Taken	Point Difference
Game 1	145	10	144	9
2	170	15	114	15
3	153	2	121	5
4	130	7	108	5
5	158	7	118	6
6	127	15	142	18
7	135	13	141	5
Mean	145.42	9.85	126.86	9.00
S.D.	15.84	4.85	15.07	5.36

In Table I the total number of shots taken in 1975 ranged from 127 to 145. The mean is 145.42 and the standard deviation is 15.84. Point difference for 1975 ranged from the low of two to the high of 15. The mean is 9.85 and the standard deviation is 4.85. Scores for shots

taken in 1976 ranged from 108 to 144 with the mean being 126.86 and the standard deviation being 15.07. Point difference for the selected seven games of 1976 showed three scores of five, the low, and one score of 18, the high. The mean is 9.00 and the standard deviation is 5.36.

In order to determine if the number of shots taken and point difference were different between years a "t" ratio for correlated samples was computed. The critical value for the .05 level of significance (one-tailed test) for six degrees of freedom is 1.943. The "t" computed was 1.882, thus, the difference was not significant.

A one-tailed "t" test was used because of the expectancy for more shots to be taken while the 30-second clock was in use. Thus, direction was predetermined.

A Pearson product moment correlation coefficient was computed between point difference and shots taken for 1975 and for 1976. The coefficient for 1975 was $-.0195$ and $.263$ for 1976. A "z" transformation was used to determine if the coefficients were different from zero and different from each other. The finding revealed that the coefficients were not significant from zero nor were they significantly different from each other. In other words, the two insignificant correlation coefficients were insignificantly different from each other.

These results indicated no relationship between point difference and shots taken either with the 30-second clock or without the use of the clock.

Chapter 5

SUMMARY AND CONCLUSION

The results of this study prove that the 30-second clock has no effect on total number of shots taken and no relationship between point difference and shots taken. Because of the small sampling for this study the statistical power was not as great.

Big Eight Conference
30-Second Clock Statistics

11

Date _____

HOME TEAM _____ Score _____ VISITING TEAM _____ Score _____

First Half	Seconds Ball in Possession Before Shot or Lost		
	0 - 10	11 - 20	21 - 30
A - Front Court First 17 Minutes			
B - Front Court Last 3 Minutes of Half			
Second Half	0 - 10	11 - 20	21 - 30
C - Front Court First 17 Minutes			
D - Front Court Last 3 Minutes of Half			
TOTALS - Front Court (A plus C) Show totals for H and V separately			
TOTALS - Last 3 Minutes (B plus D) Show totals for H and V separately			

Instructions: One individual, equipped with a stop watch, is needed to record the statistics requested on this chart. He will start his watch each time a team gains possession of the ball in the front court and will record the total time that team has possession of the ball in front court. When that team shoots or has lost possession or the ball returns to back court, his watch is to be stopped and total elapsed time is to be recorded by writing an "H" or "V" (H indicates the home team and V indicates the visitors had possession) in the appropriate box (0-10; 11-20; or 21-30) to the right of the items A, B, C, or D.

Signed _____
Recorder

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