

5 players in the single game of basketball- it was 46 minutes and 24.4 seconds.

Using the same method to determine the average amount of activity of Teams I, II, III and IV in the State Class "A" Tournament the amount of activity was found to be as follows-

Team I- 41 minutes and 27.8 seconds; Team II- 33 minutes and 53.6 seconds; Team III- 36 minutes and 6.6 seconds and Team IV- 37 minutes and 18.2 seconds. Comparing the results with those teams outside of the State Class "A" Tournament it was found that Team II was the least active while Team I was the most active.

Table V indicates the number of times players were active three or more minutes per quarter. Only 9.5 per cent of the total cases timed were active three or more minutes a quarter. The percentage was small in a state district tournament and in the State Class "A" Tournament. On the average by positions centers were most active followed by forwards and then the guards.

In the State District Tournament not a single forward of the 28 cases timed moved as much as three minutes a quarter. From league and non-league games, 41.6 per cent of all centers timed were active at least three minutes each quarter.

TABLE V - THE NUMBER OF POSITIONS TIMED AT WHICH THERE WERE 3 OR MORE MINUTES OF ACTIVITY PER QUARTER WITH THEIR CORRESPONDING PERCENTAGES

	POSITIONS	PERCENTAGES
*A-	Forwards 5 out of 28	17.8
	Centers 10 out of 24	41.6
	Guards 3 out of 20	15.0
B-	Forwards 6 out of 20	30.0
	Centers 3 out of 12	25.0
	Guards 3 out of 24	12.5

	POSITIONS	13 PERCENTAGES
*C-	Forwards 0 out of 28 Centers 1 out of 32 Guards 1 out of 20	0.0 3.1 5.0
D-	Forwards 4 out of 20 Centers 3 out of 20 Guards 6 out of 28	20.0 15.0 21.4
E-	Forwards 5 out of 128 Centers 3 out of 64 Guards 4 out of 128	3.9 4.6 3.1
F-	Forwards 20 out of 224 Centers 20 out of 152 Guards 17 out of 220	8.0 13.1 7.7
TOTAL	57 out of 595	9.5

*A- League and non-league games.

B- A county league tournament.

C- A State District Tournament.

D- A State Regional Tournament.

E- State Class "A" Tournament.

F- All cases

The range of activity at individual positions from the least amount of time to the greatest in any quarter is shown in Table VI. The minimum activity per quarter of any single player was 49 seconds and the maximum 4 minutes and 58 seconds. In both cases, a guard position was involved.

TABLE VI - RANGE OF MOVEMENTS BY POSITIONS IN ANY
QUARTER IN MINUTES AND SECONDS.

A- Individual cases excluding State Class "A" Tournament.

B- Individual cases in the State Class "A" Tournament.

	A	B
FORWARDS	1:20.0 to 4:00.0	1:15.0 to 3:16.0
CENTERS	1:09.0 to 4:00.0	1:16.0 to 3:33.0
GUARDS	0:51.0 to 4:58.0	0:49.0 to 3:45.0

Table VII reveals that in individual positions excluding those of the State Class "A" Tournament, one center position was active 13 minutes and 58 seconds, one forward position 14 minutes and 29 seconds and one guard position 15 minutes and 23 seconds, whereby the individual positions of the State Class "A" Tournament showed from two to three minutes less activity per game.

TABLE VII - GREATEST AMOUNT OF ACTIVITY OF A SINGLE POSITION
IN AN ENTIRE GAME IN MINUTES AND SECONDS

A- Individual cases excluding State Class "A" Tournament.

B- Individual cases in the State Class "A" Tournament.

	A	B
FORWARD	14:29.0	11:38.0
CENTER	13:58.0	10:47.0
GUARD	15:23.0	13:47.0

Table VIII indicates the least amount of activity at a single position in an entire game. The activity at one guard position in the State Class "A" Tournament was only 3 minutes and 39 seconds, which is less than an average of 1 minute per quarter. In only one instance in the State Class "A" Tournament was there greater movement at a single position than in all games previous to State tournament and that was at a forward position.

TABLE VIII - LEAST AMOUNT OF ACTIVITY AT A SINGLE POSITION
IN A COMPLETE GAME IN MINUTES AND SECONDS

A- Individual cases excluding State Class "A" Tournament

B- Individual cases in the State Class "A" Tournament.

	A	B
FORWARD	5:14.0	6:37.0

	A	B
CENTER	7:41.0	<u>6:04.0</u>
GUARD	4:08.0	3:39.0

TIME CONSUMED FOR ENTIRE GAME

In this part of the study is included the timing of the entire game as divided into quarters, interruptions and intermissions.

The average elapsed time consumed in playing each quarter is indicated in Table IX. First, the average of the 61 games is shown. It will be noted that greater time is used for each subsequent quarter. It took on the average of 2.36 minutes more to finish the fourth quarter than the first quarter. The 61 games are divided into 5 groups. The time necessary to terminate each quarter was less in the State Class "A" Tournament (F-Table IX) than in any other group.

The actual playing time according to high school rules is 8 minutes per quarter. The groups in Table IX consumed from 2.62 to 6.43 more minutes to complete each quarter than according to high school rules. This additional time was for interruptions.

TABLE IX - TIME IN MINUTES CONSUMED IN PLAYING EACH QUARTER

	NUMBER OF GAMES	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
*A-	61	11:58	12:02	12:48	13:94
B-	13	12:30	13:00	13:00	13:92
C-	7	11:14	12:28	12:14	14:57
D-	10	12:05	11:30	12:50	13:60
E-	15	11:86	12:73	12:93	14:93
F					

F- 16 10:62 10:90 11:75 12:97¹⁶

-
- *A- All games timed during basketball season.
 - B- League and non-league games.
 - C- A County League Tournament.
 - D- A State District Tournament of Kansas.
 - E- A State Regional Tournament of Kansas.
 - F- State Class "A" Tournament of Kansas.

In addition to showing how much elapsed time is consumed in playing quarters according to described groups, Table X indicates in which quarter the least, as well as the greatest elapsed time was used by any single team. As indicated one team in its second quarter utilized only 8.5 minutes which is but one-half minute more than the regulation time of a quarter. The greatest elapsed time was 21 minutes. In this quarter, aside from numerous other interruptions, the team had many substitutions, "time-outs" and a great number of fouls were called.

TABLE X - LEAST AND GREATEST ELAPSED TIME DURING ANY QUARTER
THROUGHOUT THE SEASON AS COLLECTED FROM 61 GAMES IN MINUTES

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
LEAST ELAPSED TIME	9.00	8.50	9.00	9:50
GREATEST ELAPSED TIME	17.00	18.00	16.00	21.00

The total elapsed time for intermissions and interruptions are specified in Table XI. Only in one event was there less time employed for interruptions than for intermissions. That was in the State Class "A" Tournament. On the average in all the games timed approximately four more minutes were consumed for interruptions than

for intermissions. Intermissions are the rest periods between quarters and the halves; while interruptions cover time for substitutions, calling of fouls, free throwing, "time-outs" taken by the teams and "time-outs" by the officials.

Comparing the different groups of team it was found that less time was consumed by teams in the State Class "A" Tournament for playing the game than in any other, although more time was used for intermissions.

Regional tournaments required an average of 66.78 minutes to play a game, whereas, in the State Class "A" Tournament only 60.91 minutes were taken.

In the county league tournament, the regulation amount of time for quarters and the half allowed by the rules was followed precisely; all other tournaments exceeded that amount.

Fouls were recorded in twelve games in a regional tournament and all the games of State Class "A" Tournament. The average number of fouls called was 26.6 in the former and 17.6 for the latter. This difference of nine fouls per game naturally has much to do with the amount of total elapsed time used in playing games.

TABLE XI - INDICATES THE AVERAGE TIME OF GAME; INTERRUPTIONS; INTERMISSIONS, TOTAL ELAPSED TIME IN MINUTES, AS WELL AS THE NUMBER OF FOULS FOR TEAMS IN VARIOUS GROUPS

NO. OF GAMES	ACTUAL TIME OF GAME	INTERMISSIONS	INTERRUPTIONS	AVERAGE FOULS CALLED	TOTAL ELAPSED TIME TO PLAY GAME.
*A- 61	32	14:38	18.02		64.40
B- 13	32	14.61	20.22		66.83
C- 7	32	14.00	18.13		64.13
D- 10	32	14.90	17.45		64.35
E- 15	32	14.33	20.45	26.6	66.78
F- 16	32	14.72	14.24	17.6	60.96

- *A- All games timed during basketball season.
- B- League and non-league games.
- C- A County League Tournament.
- D- A State District Tournament.
- E- A State Regional Tournament.
- F- State Class "A" Tournament.

Table XII shows that the least elapsed time in any one game for (A) intermissions and (B) interruptions was 12 and 11 minutes respectively; and for an entire game 56.5 minutes.

It will be noted that the greatest elapsed time was as follows: intermissions 19 minutes (in the State Class "A" Tournament) 29 minutes for interruptions and 75 minutes to play an entire game.

TABLE XII - INDICATES THE LEAST ELAPSED TIME AND THE GREATEST ELAPSED TIME CONSUMED IN ANY ONE GAME IN MINUTES

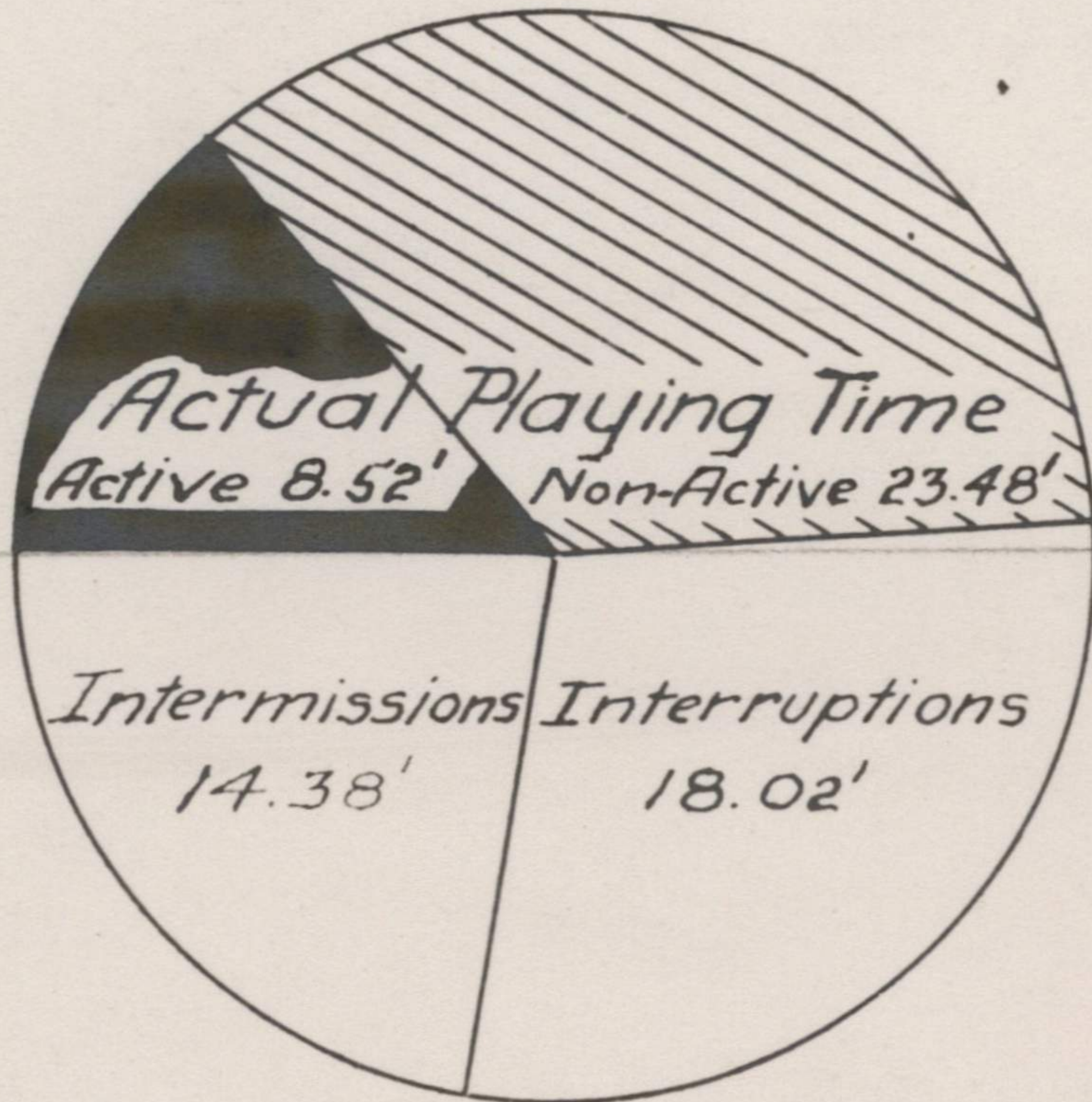
	Time of game	A	B	C
Least elapsed time played	32	12.00	11.00	56.5
Greatest elapsed time played	32	19.00	29.00	75.0

- A- Time for intermissions.
- B- Time for interruptions.
- C- Time for entire game.

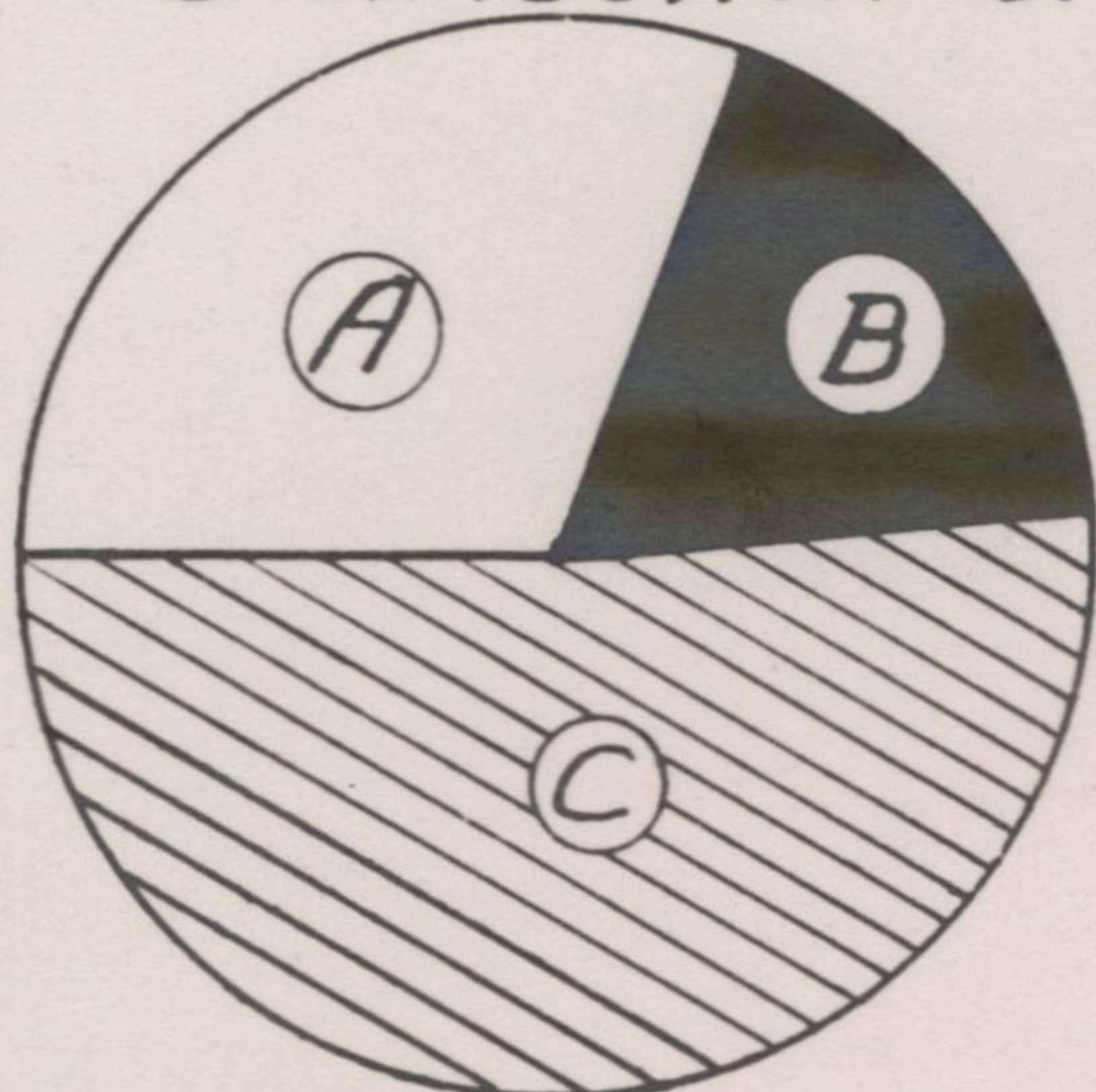
THE DISTRIBUTION OF TIME PER GAME

Plate I, A, represents the distribution of time for a complete game according to season averages. The average length that it took to complete the game of basketball during the season was 64.4 minutes. The large circle represents that time (64.4 minutes) divided into parts. That portion of the circle in black (8.52 minutes) is the amount of active movement by the average player during the game. The shaded territory of the circle (23.48 minutes) is that part of the 32 minutes of actual playing time in which players

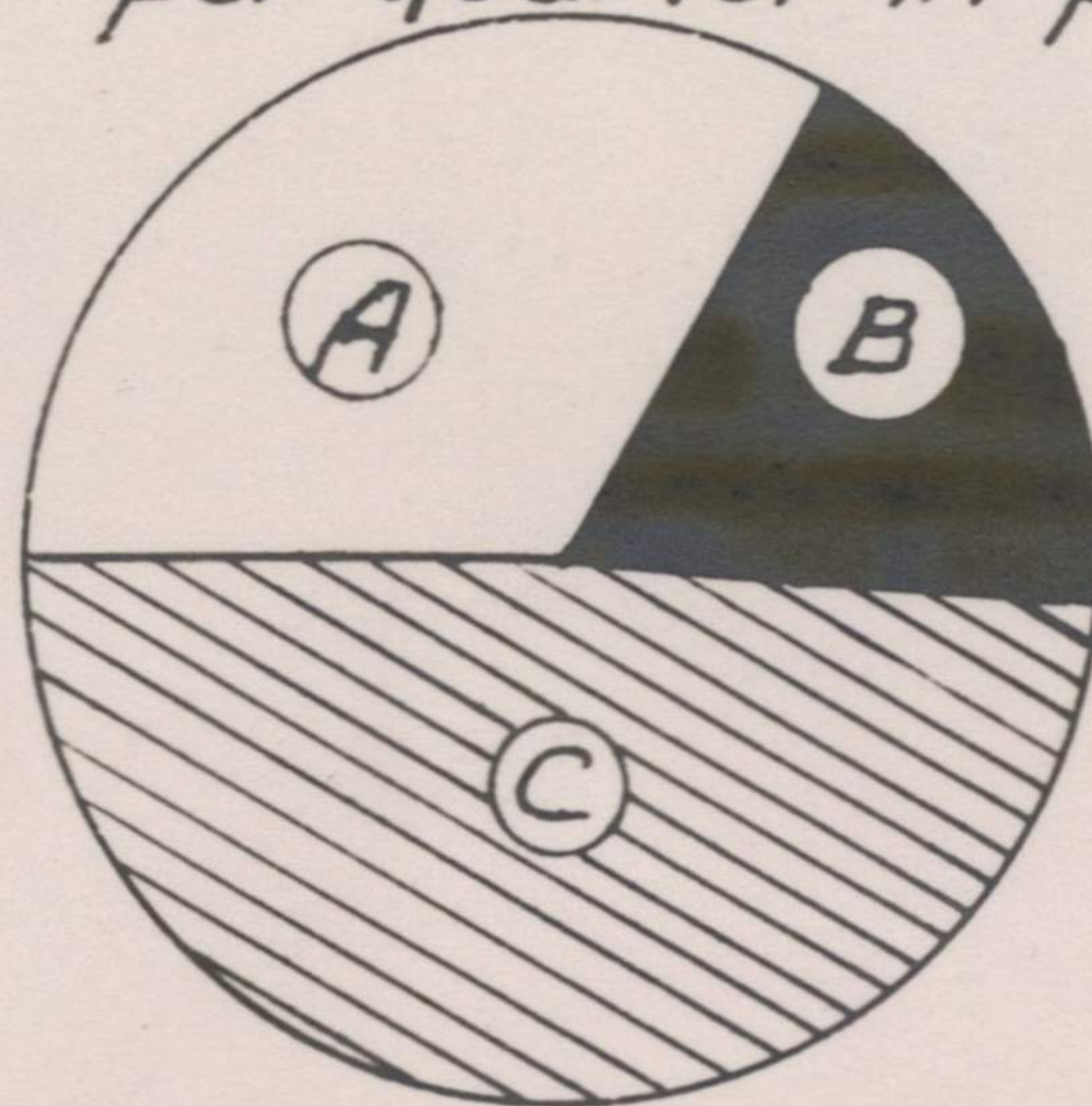
Plate I A
 Distribution of time for entire game



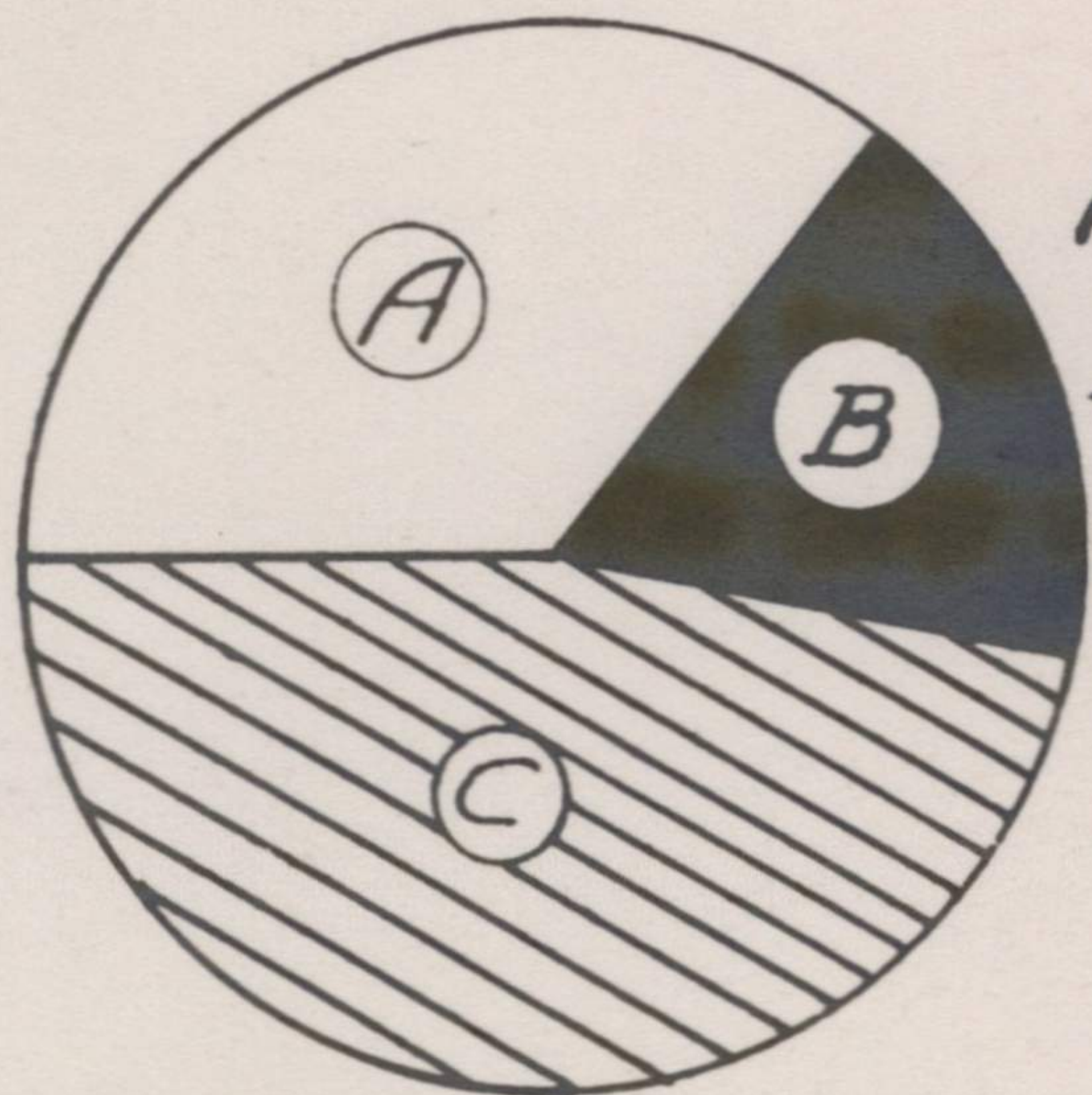
B
 Distribution of time per quarter in percentages



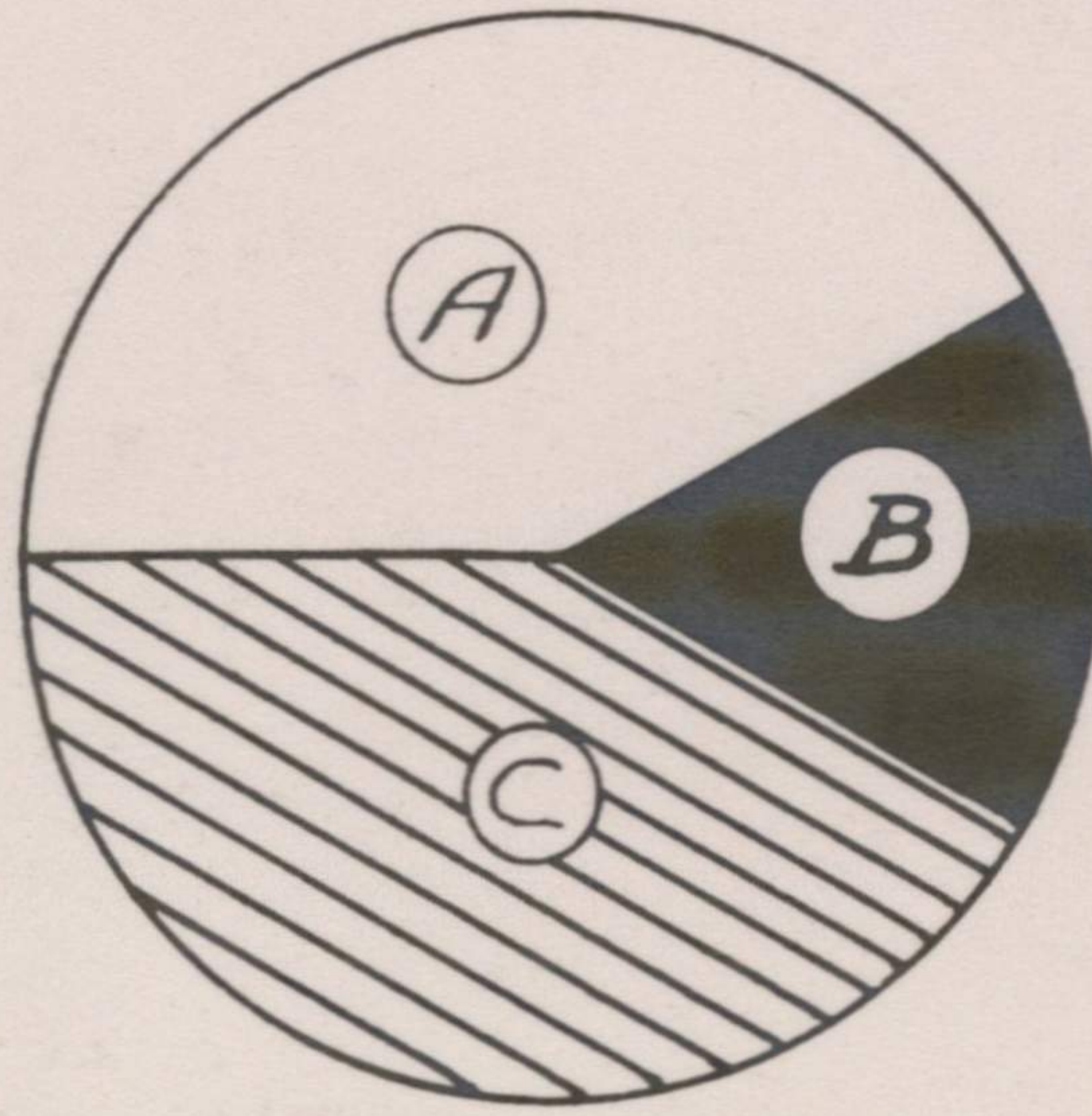
First Quarter



Second Quarter



Third Quarter



Fourth Quarter

Key A-Interruptions B-Activity C-Non-Activity

were not active. The remaining part of the circle is divided between intermissions and interruptions (14.38 and 18.02 minutes respectively).

The average per cent of activity for all positions in connection with the time allowed by rules (8 minutes per quarter) is as follows: First quarter 25 per cent, second quarter 26 percent, third quarter 26.7 per cent and fourth quarter 28.5 per cent. This showed an average increase of 3.5 per cent of activity for the last quarter over that of the first quarter. The average per cent of activity of movements with reference to the total elapsed time was 17.5, 17.2, 17.0 and 16.4, or a decrease of 1.1 per cent of activity between the first and fourth quarters; the per cent readings being from the first to the fourth quarter.

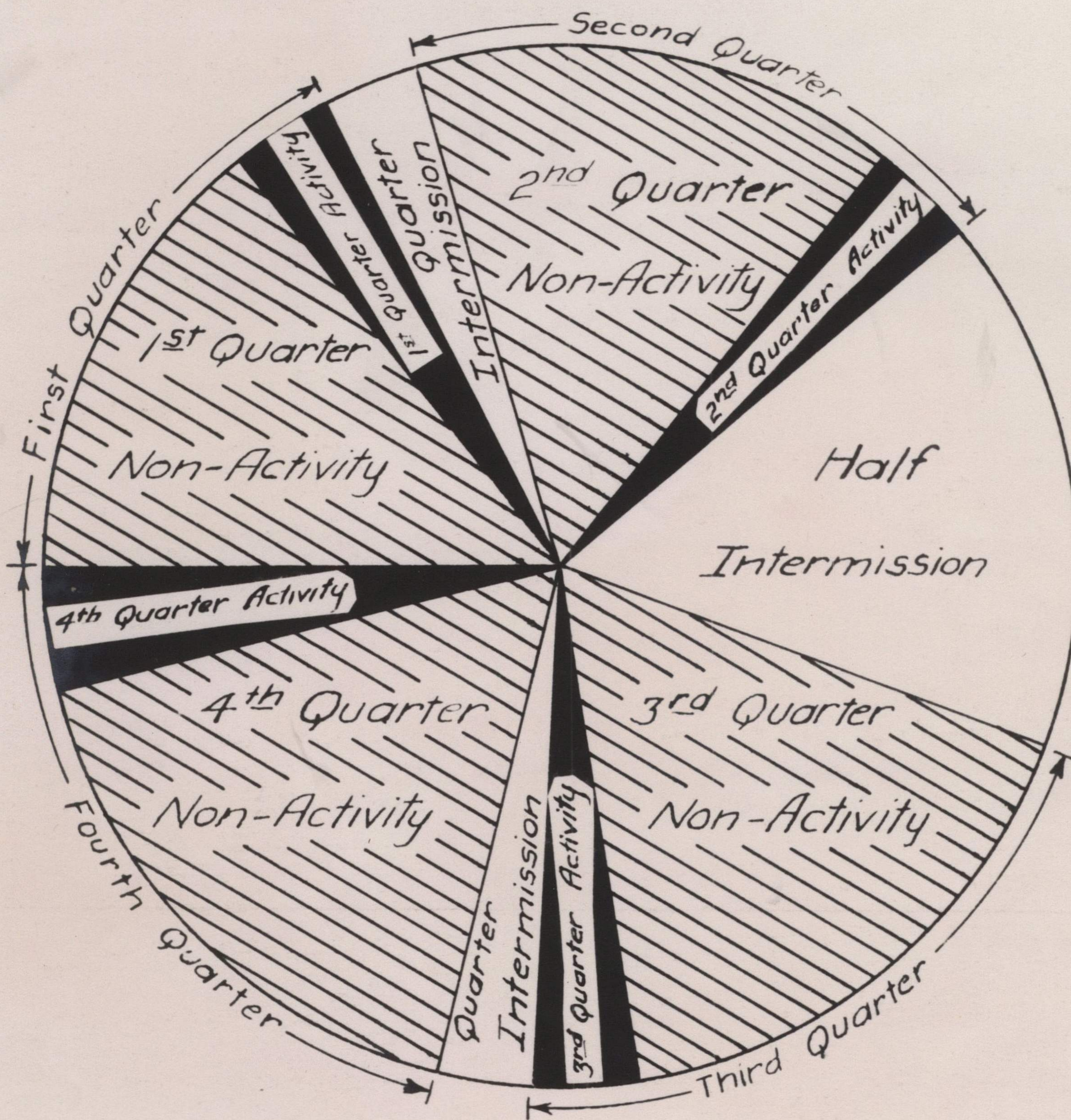
This study showed that the proportion of interruptions increased as the game progressed - from 30.9 per cent of the total elapsed time for the first quarter to 42.6 per cent for the fourth quarter, an increase of 11.7 per cent for the fourth quarter over the first quarter.

The percentage of non-activity showed a decrease of 10.6 per cent for the last quarter over the first quarter. The percentage of activity, interruptions and non-activity by quarters is shown by four small circle drawings in Plate I-B. The circles represent the average total elapsed time for completing each quarter. Each quarter being divided into three parts. A- interruptions; B- activity and C- non-activity.

The time distribution of activity and non-activity per quarter and for intermissions in sequence for an entire game is shown in diagrammatic form in Plate II. The average time spent to complete

Plate II

Time distribution of activity and non-activity per quarter and of intermissions with reference to the entire game time of 64.4 minutes.



the game of basketball as collected from 61 games was 64.4 minutes. The distribution of time was divided into seven parts as follows: (a) the total elapsed time for the FIRST QUARTER was 11.58 minutes, divided into 2.02 minutes of activity and 9.56 minutes of non-activity; (b) for intermission between the first and second quarters was 2 minutes; (c) for the SECOND QUARTER the elapsed time was 12.02 minutes, divided into 2.07 minutes of activity and 9.95 minutes for non-activity; (d) for half intermission between second and third quarters was 10.38 minutes; (e) for the THIRD QUARTER the elapsed time was 12.48 minutes of which 2.14 minutes was for activity and 10.34 minutes for non-activity; (f) 2 minutes for rest between third and fourth quarters and (g) for the FOURTH QUARTER the total elapsed time was 13.94 minutes divided into 2.28 minutes in activity and 11.66 in non-activity.

The average movements made by forwards, centers and guards in various groups are shown in Plate III. These groups are "A" representing all cases timed; "B" all cases excluding those of the STATE Class "A" Tournament; "E" are Teams I, II, III and IV playing throughout the entire State Class "A" Tournament. The movements of the forwards, centers and guards are the total elapsed time of activity in each quarter of 8 minutes of actual playing time. The greatest average movements in any quarter by positions are those by (1) B-forwards in the second quarter which amounted to 2 minutes and 31 seconds; (2) B-centers in the fourth quarter- 2 minutes and 38 seconds; and (3) B-guards in the fourth quarter- 2 minutes and 24 seconds. The least amount of activity in any quarter by positions is that of (1) F-forwards in the second quarter- 1 minute and 51 seconds; (2) E-centers, second quarter - 1 minute 26.6 seconds; and (3)

Plate III

Movements made by positions per quarter
 First Quarter Second Quarter

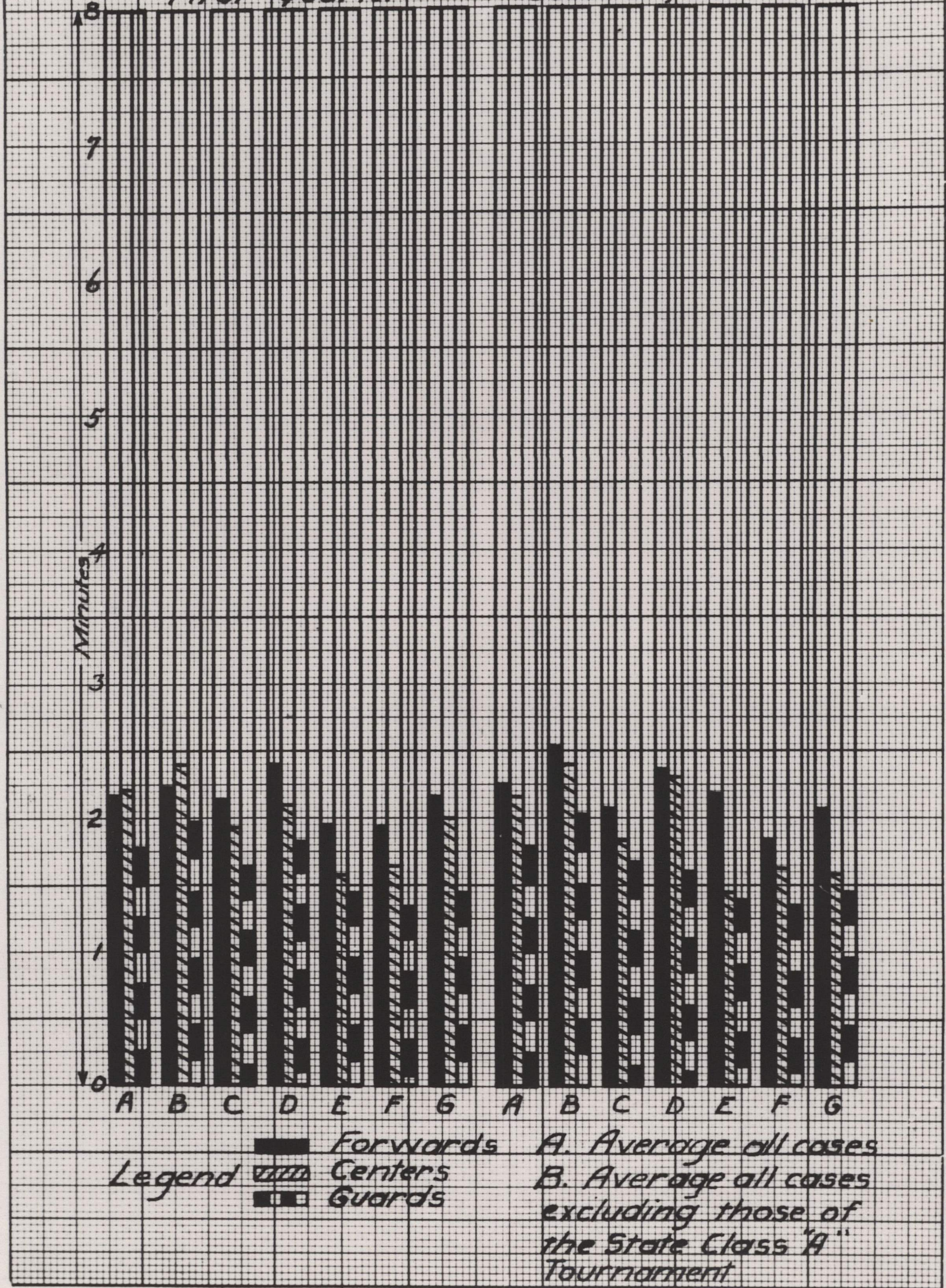
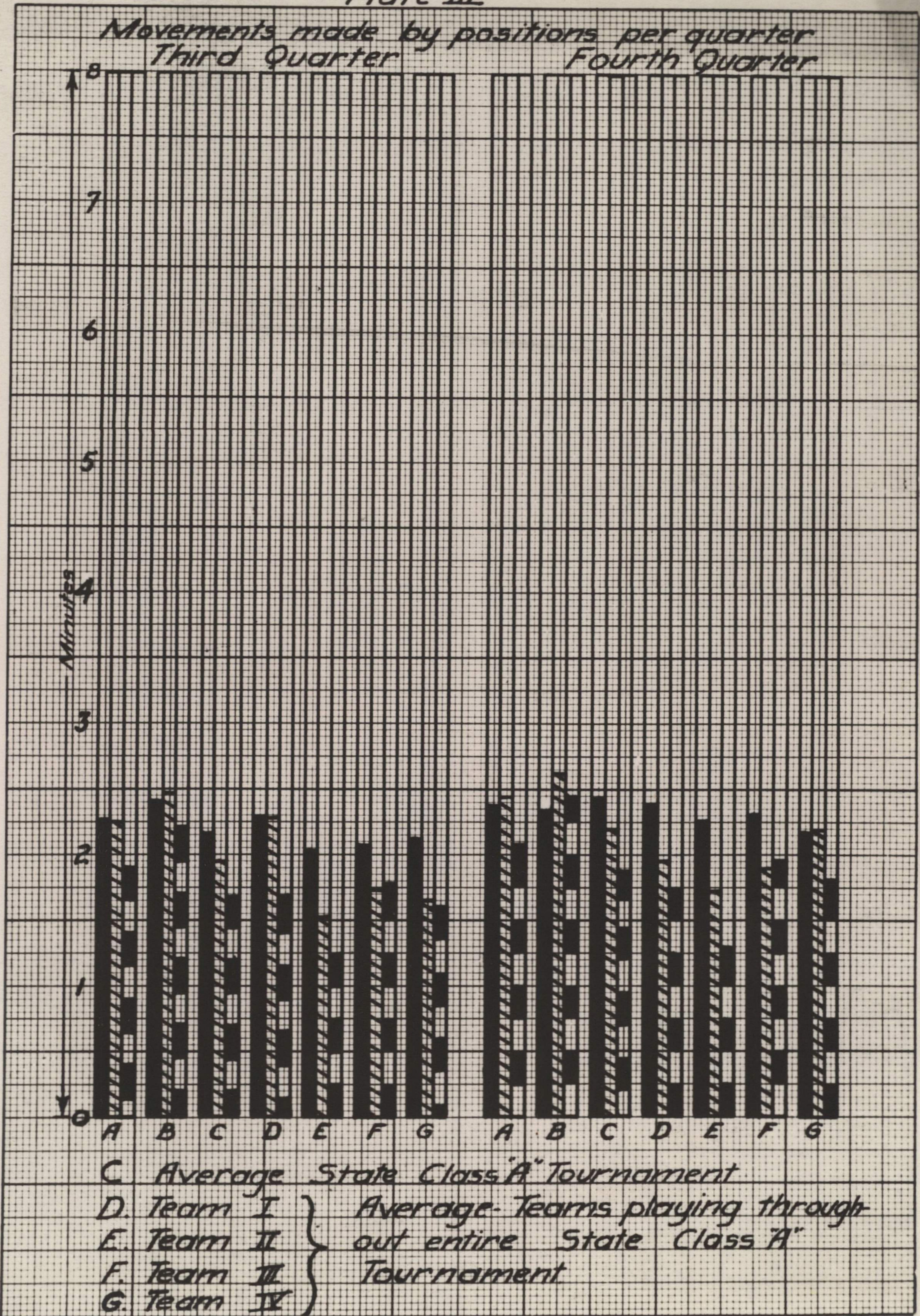


Plate III

Movements made by positions per quarter
Third Quarter Fourth Quarter



CARTER'S STATIONERY

C. Average State Class "A" Tournament
 D. Team I } Average Teams playing through
 E. Team II } out entire State Class "A"
 F. Team III } Tournament
 G. Team IV }

E- guards, third quarter- 1 minute and 15.3 seconds.

The greatest amount of movement was that of Group B and the least by teams who played throughout the entire State Class "A" Tournament, E and F groups.

DISCUSSION OF DATA

Since the greatest number of positions (80) timed in any group was in the State Class "A" Tournament, much of this discussion will compare findings of the State Class "A" Tournament with the combined findings of positions played in league, non-league games, county, district and regional tournaments.

The composite data show that the average time consumed to play a game of basketball was 64.4 minutes during which an average of 8.52 minutes was consumed by activity, distributed among four quarters. It might be interesting to state that as the game progressed, the activity increased from quarter to quarter; while the total elapsed time per quarter enlarged. The increase of elapsed time per quarter due to various interruptions, increased at a greater rate than the activity, which showed a gradual decrease in percentage of movement per quarter. This would give the players more time to recuperate even though there is on the average an increase in activity.

These data bring out the fact that the average activity at each position for players on teams playing in the State Class "A" Tournament in 1940 was less than the activity at each position in other games timed for this study. (Tables I, II, III and IV.) Perhaps, due to the better playing technique of teams in the State Class "A" Tournament less substitutions were made, therefore the starting players remained longer in the game. It is assumed that these players with better methods know how to conserve their energies by ex-

pending the least amount of energy to get the desired results.

Another controlling factor in reducing the amount of action was primarily due to the type of offense used by these teams. Set plays were dominant in the State Class "A" Tournament in which passing was used to draw opponents out of position before an attempt to score was made.

The time consumed to play a single game was less in the State Class "A" Tournament than was the case in the other games timed. Probable reasons for less consumption of time was perhaps due to two factors (1) less substitutions (2) smaller number of fouls and fewer violations.

This study indicates that on the criterion used for activity, high school basketball players consume a relatively small amount of game time in activity. Guards as a group use less time for action than do forwards or centers. The latter two are about equally active unless teams use a post type of offense- in that case the man at the post position moves the less.

As previously stated it can be assumed that members of the teams playing in a State Class "A" Tournament have better methods of securing definite goals with the least amount of activity possible. It is presumed for this reason that one finds less time used for activity during the State Class "A" Tournament games than in games of regular season or games in other tournaments.

It is difficult to compare this study with others as very little available information was found about movements of high school basketball players. As has been previously stated most studies regarding basketball players deal with the possible organic injury, therefore, very little comparison can be made. Data will present their own facts.

It might be interesting to compare some of the findings in this study with the brief report by Dr. James Naismith (4). His criterion for timing the activity made by players was: "all movements made whether walking or otherwise", whereas in this study only activity greater than a walk was recorded. While his figures regarding movements cannot be adequately compared with this study because of this fact, they are interesting nevertheless. Dr. Naismith's report shows that players were active 20 minutes and 12 seconds per game as contrasted to 8 minutes and 31.4 seconds of activity in this investigation. Part of the greater amount of activity by high school players in games played in Kansas City, Missouri (4) was due to the greater length of time allowed to play.

Dr. Naismith's study (4) on Kansas City, Missouri high school teams revealed that those games which were 40 minutes in length required an elapsed time of 69 minutes for completion. This study shows that the games of 32 minutes in length required an elapsed time of 64.4 minutes for completion. Since the Kansas City, Missouri games consumed an elapsed time of but 4.6 minutes more in 40 minute games, it can be assumed that it actually takes a comparatively greater amount of time to play a game under the existing rules than was the case 15 years ago. Twenty-nine minutes were used for interruptions and intermissions in 1925 while these items were found to consume 32.4 minutes in this study.

Comparing the results of this study with that made by Nancy Miner, Pauline Hodgson and Anna Espenschade on girls basketball, with respect to time spent in active play, there is a close relationship of strenuous activity between girls two-court and boys high school games. Their criterion for timing strenuous activity was all

movements greater than a walk, which is exactly the same as that used in this report. Both reports use 8 minute quarters of actual playing time; the girls' percentage of average activity was nearly 30 per quarter for the advanced players, while the boys was nearly 27. The probable reason for girls having greater activity lies in the fact that women's rules allow players to dribble but once; for that reason they must move about in order to receive passes.

SUMMARY

The following summary and conclusions may be drawn from the data as presented:

1. The average activity of high school players in the game of basketball is 8 minutes and 31.4 seconds.
2. Intermissions and interruptions consumed 32.4 minutes, while the actual playing time according to rules is 32 minutes.
3. The average length of time consumed to play the game of basketball was 64.4 minutes.
4. More time used now for interruptions and intermissions than 15 years ago.
5. Guards are the least active players.
6. Less fouls were called in State Class "A" Tournament games than in Regional Tournament games.
7. As a game progressed the amount of time of activity of all positions increased per quarter.
8. As a game progressed the average percentage of activity of movement of all positions with reference to total elapsed time decreased.
9. Players playing in the State Class "A" Tournament are less active than players in other games.
10. The least amount of action in any quarter timed at any single position was 49 seconds.
11. The greatest amount of action in any quarter timed at any position was 4 minutes and 58 seconds.
12. The least amount of activity in an entire game at a single position was 3 minutes and 39 seconds.

13. The greatest amount of activity in an entire game at a single position was 15 minutes and 23 seconds.
14. Time consumed in playing each quarter increased as games progressed.
15. Only 9.5 per cent of the players at the various positions were active 3 or more minutes.
16. According to data gathered the number of interruptions and fouls have a great bearing upon the length of games.

CONCLUSION

This study was attempted to secure data as to the time high school basket ball players were active during games. These data show that players were active approximately 27 per cent of the actual playing time. Judging entirely upon the amount of time during which players were active, it is reasonable to assume that if the game of basketball is proven harmful to high school players, the basis for this judgment must be on factors other than those relative to the amount of time players are active.

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APPENDIX

Complete raw data of activity for the 149 cases by positions timed by quarters in minutes and seconds.

A - League and non-league games. B - County tournament.

C - District tournament. D - Regional tournament. E - State Class "A" Tournament.

FORWARDS

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
A	1:51	1:57.5	2:27	3:10
	1:56	2:00	2:58	2:24
	2:00	3:08	3:37	3:10
	1:35	1:01	1:34	1:04
	2:00	2:22	2:46	3:25
	2:21	2:51	1:50	1:53
	2:10	2:45	2:57	2:56
	3:57	4:00	2:51	3:30
B	2:07	1:58	1:45	1:36
	4:00	3:57	3:40	2:52
	2:30	2:22	2:55	2:07
	2:00	2:44	2:00	2:08
	1:59	1:58	2:04	1:20
C	2:08	1:51	2:05	2:13
	2:14	2:52	2:15	1:55
	2:00	2:06	1:56	1:55
	2:08	2:33	1:50	1:51
	1:28	2:09	1:40	2:30
	2:30	2:24	2:33	2:50
	2:24	2:14	2:21	2:15
	2:10	2:34	2:20	3:21
D	2:00	3:50	3:00	2:51
	2:46	3:40	2:50	2:10
	1:31	2:38	2:00	1:57
	2:03	2:17	1:38	2:21
	2:40	2:08	2:29	2:49
E	2:45	2:53	2:28	3:00
	2:25	2:48	2:35	2:30
	2:05	2:10	1:55	2:10
	2:05	2:04	1:55	2:02
	1:55	1:40	1:50	2:05
	2:01	1:45	1:35	2:00
	2:05	1:50	2:47	2:22
	1:55	1:30	1:40	1:50
	1:45	2:00	1:54	2:33
	1:45	1:25	2:51	1:36
	2:15	1:56	2:21	2:30

FORWARDS (continued)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	2:21	1:26	2:05	1:27
	1:52	1:37	2:22	3:10
E	2:55	2:43	2:43	2:57
	1:49	1:23	2:16	2:15
	1:26	1:46	1:43	2:31
	2:32	2:10	1:52	2:02
	2:20	1:58	2:15	2:12
	2:15	2:20	2:08	2:31
	2:00	2:34	1:57	2:28
	2:15	2:45	2:07	2:37
	2:24	1:45	2:22	2:11
	2:00	2:00	2:22	2:19
	1:32	2:15	2:40	2:26
	1:33	1:40	1:43	1:52
	1:15	1:31	2:01	2:00
	2:15	2:15	1:52	2:15
	2:29	3:16	2:46	2:32
	2:21	2:26	3:00	2:47
	3:15	2:40	2:11	2:23

CENTERS

	3:24	3:59	3:18	3:17
	3:31	3:45	2:41	2:51
A	2:05	1:40	2:12	3:49
	2:00	1:50	1:54	2:25
	2:00	2:15	2:43	2:00
	2:49	3:29	3:00	3:35
	2:10	3:20	3:45	3:00
B	2:40	2:52	2:00	2:00
	2:33	1:47	2:09	2:22
	2:26	2:08	2:47	2:43
	2:18	2:01	1:47	2:09
	1:35	2:29	2:29	3:13
C	1:41	1:09	2:09	2:50
	2:03	2:08	2:16	2:16
	2:09	2:58	2:43	1:58
	3:07	2:09	2:34	1:12
	2:59	2:04	2:11	2:13
	2:23	2:20	2:46	2:35
	2:54	1:56	2:00	2:40
	2:00	2:52	3:10	4:00
	2:34	2:22	2:02	3:15
	1:22	1:53	1:50	2:36
	1:44	1:56	2:14	3:33
	2:23	2:36	2:09	2:25
	1:49	1:26	1:34	1:37

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	1:51	1:33	1:40	2:00
	2:20	1:44	1:54	2:03
	2:20	2:16	2:59	3:12
	2:09	2:35	2:39	3:00
	2:12	1:38	2:07	2:31
E	1:24	1:16	1:55	1:29
	1:55	1:48	1:32	1:40
	1:32	1:30	1:30	1:38
	2:02	2:15	2:15	2:00
	1:43	2:05	1:35	2:13
	1:21	1:24	1:33	1:58
	1:56	1:17	1:22	2:23
	1:50	2:06	2:28	1:30

GUARDS

	2:46	4:58	3:00	4:39
	1:25	1:30	1:50	1:26
A	1:36	1:34	1:23	2:03
	2:40	2:17	2:27	1:49
	1:25	1:00	2:18	1:45
	0:51	1:19	1:06	0:52
	2:45	1:42	2:00	3:00
B	1:29	2:05	1:40	1:51
	1:30	1:37	2:00	2:10
	3:03	2:06	1:47	2:45
	2:25	1:45	1:45	3:01
	1:35	2:23	2:21	4:17
	1:56	1:38	1:41	1:11
C	2:06	1:12	2:36	2:00
	2:38	2:54	1:28	1:52
	2:22	1:18	2:39	2:20
	3:00	2:00	2:00	2:29
	2:00	1:46	2:01	1:59
	1:58	2:02	3:00	2:35
D	2:05	2:04	3:00	4:23
	2:21	2:05	3:20	2:33
	1:16	2:50	2:35	2:00
	1:10	3:00	2:00	1:42
	1:40	1:35	1:10	2:10
	2:00	2:05	1:30	1:10
	2:40	1:30	2:30	3:00
	1:35	2:00	1:35	2:30
	1:00	1:30	1:20	2:20
E	2:00	1:30	1:30	2:15
	1:50	1:41	2:04	1:49
	2:27	2:35	1:56	2:03
	2:20	1:57	1:30	1:54
	1:58	1:42	1:50	2:45
	2:00	1:30	1:55	1:45
	3:12	2:55	3:45	3:55

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	2:36	2:15	1:15	1:21
	2:07	2:00	2:20	2:55
	1:25	1:00	0:50	0:55
	1:20	1:25	2:20	2:30
E	1:28	1:05	1:36	1:29
	1:45	1:58	1:30	1:28
	1:15	1:13	2:03	1:38
	1:14	1:27	1:49	1:14
	1:22	1:31	2:04	2:10
	2:30	2:05	2:37	2:20
	1:50	1:37	2:00	2:25
	1:25	1:32	1:41	1:30
	1:15	0:58	1:20	1:05
	0:55	0:58	1:00	1:20
	0:49	1:12	1:06	1:37
	0:52	0:56	1:01	0:50
	1:05	1:08	1:10	1:14
	0:58	1:23	1:30	1:32
	0:56	1:05	0:55	1:15
	0:54	1:01	1:19	1:24

Complete raw data of elapsed time for quarters, for intermissions, for interruptions and for games with fouls recorded in D & E.

	QUARTERS				Intermiss- ions	Interrupt- ions	No. Fouls	Total elapsed time of games.	
	First	Second	Third	Fourth				Hr.	Minutes
	12.0	12.0	14.0	13.0	14.0	19.0	1	--	5.0
	12.0	12.0	15.0	13.0	14.0	20.0	1	--	5.0
	14.0	13.0	13.0	15.0	14.0	23.0	1	--	10.0
	13.0	12.0	13.0	14.0	13.0	20.0	1	--	5.0
	15.0	13.0	13.0	14.0	17.0	23.0	1	--	12.0
	11.0	15.0	10.0	15.0	14.0	19.0	1	--	5.0
A	11.0	13.0	9.0	10.0	15.0	11.0	0	--	58.0
	10.0	14.0	15.0	15.0	16.0	22.0	1	--	10.0
	13.0	13.0	14.0	16.0	14.0	24.0	1	--	10.0
	12.0	15.0	15.0	14.0	15.0	24.0	1	--	11.0
	15.0	14.0	12.0	18.0	16.0	27.0	1	--	15.0
	9.0	11.0	15.0	11.0	14.0	14.0	1	--	00.0
	13.0	12.0	11.0	13.0	14.0	17.0	1	--	3.0
	13.0	12.0	13.0	12.0	14.0	18.0	1	--	4.0
	9.0	14.0	11.0	13.0	14.0	15.0	1	--	1.0
B	13.0	12.0	12.0	14.0	14.0	19.0	1	--	5.0
	11.0	11.0	14.0	13.0	14.0	17.0	1	--	3.0
	13.0	13.0	14.0	15.0	14.0	23.0	1	--	9.0
	9.0	13.0	11.0	19.0	14.0	20.0	1	--	6.0
	10.0	11.0	10.0	16.0	14.0	15.0	1	--	1.0

APPENDIX

	QUARTERS				Intermis- sions	Inter- rptions	No. fouls	31 Total elapsed time of games	
	First	Second	Third	Fourth				Hr.	Minutes
	9.0	10.0	11.0	13.0	14.0	11.0		0	-- 57.0
	13.0	13.0	12.0	11.0	14.0	17.0		1	-- 3.0
	10.0	10.0	12.0	13.0	14.0	13.0		0	-- 59.0
C	12.0	10.0	12.0	14.0	14.0	16.0		1	-- 2.0
	12.0	10.0	12.0	12.0	14.0	14.0		1	-- 0.0
	13.0	15.0	15.0	13.0	14.0	24.0		1	-- 10.0
	11.0	10.0	11.0	16.0	14.0	16.0		1	-- 2.0
	11.5	11.0	11.0	11.0	12.0	12.0		0	-- 56.5
	17.0	11.0	13.0	16.0	12.0	25.0		1	-- 9.0
	12.0	13.0	16.0	17.0	17.0	26.0		1	-- 15.0
	11.0	11.0	11.0	14.0	18.0	15.0		1	-- 5.0
	10.0	13.0	12.0	13.0	14.0	16.0	22	1	-- 2.0
	13.0	12.0	13.0	17.0	15.0	23.0		1	-- 10.0
	15.0	13.0	13.0	17.0	14.0	26.0		1	-- 12.0
D	13.0	12.0	13.0	15.0	12.0	21.0	32	1	-- 5.0
	14.0	12.0	14.0	14.0	17.0	22.0	35	1	-- 11.0
	11.0	11.0	10.0	14.0	14.0	14.0	20	1	-- 0.0
	14.0	14.0	12.0	21.0	14.0	29.0	30	1	-- 15.0
	11.0	12.0	14.0	13.0	13.0	18.0	21	1	-- 3.0
	11.0	18.0	16.0	15.0	15.0	28.0	28	1	-- 15.0
	12.0	12.0	13.0	14.0	15.0	19.0	29	1	-- 6.0
	11.0	12.0	10.0	15.0	15.0	16.0	17	1	-- 3.0
	11.0	12.0	16.0	13.0	12.0	22.0	18	1	-- 6.0
	11.0	14.0	13.0	14.0	13.0	20.0	26	1	-- 7.0
	10.0	13.0	12.0	15.0	14.0	18.0	26	1	-- 4.0
	13.0	11.5	14.0	9.5	13.5	16.0	20	1	-- 1.5
	11.0	12.0	15.0	13.0	14.0	19.0	26	1	-- 5.0
	12.0	8.5	12.5	15.0	14.0	16.0	19	1	-- 2.0
	11.0	10.0	10.0	14.0	14.0	13.0	19	0	-- 59.0
E	10.0	10.0	10.0	14.0	14.0	13.0	12.	0	-- 59.0
	10.0	12.0	9.5	13.5	15.0	13.0	17	1	-- 0.0
	11.0	11.0	11.0	13.0	14.0	15.0	24	1	-- 1.0
	12.0	9.5	13.5	12.0	15.0	15.0	17	1	-- 2.0
	10.0	10.0	12.0	12.0	14.0	13.0	16	0	-- 59.0
	10.0	10.0	11.0	12.0	14.0	11.0	15.	0	-- 57.0
	10.0	12.0	10.0	14.0	14.0	15.0	18	1	-- 1.0
	11.0	10.0	13.0	14.0	13.0	16.0	20	1	-- 1.0
	10.0	12.0	10.0	12.0	15.0	12.0	20	0	-- 59.0
	9.0	13.0	12.0	10.0	15.0	12.0	11	0	-- 59.0
	10.0	10.0	11.0	16.0	19.0	16.0	15	1	-- 7.0
	10.0	11.0	11.0	13.0	18.0	13.0	14	1	-- 3.0

Range in Minutes and Seconds	Number of Cases by positions			Total
	Forwards	Centers	Guards	
0:41 - 1:00	0	0	19	19
1:01 - 1:20	4	4	32	40
1:20 - 1:40	22	24	46	92
1:41 - 2:00	55	30	45	130
2:01 - 2:20	52	37	29	118
2:21 - 2:40	45	23	24	92
2:41 - 3:00	29	17	15	61
3:01 - 3:20	6	7	4	17
3:21 - 3:40	6	5	0	11
3:41 - 4:00	5	5	2	12
4:01 - 4:20	0	0	1	1
4:20 - 4:40	0	0	2	2
4:41 - 5:00	0	0	1	1
TOTAL	224	152	220	596