

September 16, 1939.

Dean R. A. Schwegler,
School of Education,
University of Kansas.

Dear Dean Schwegler:

I wish to acquaint you with the case of Mr. Ernst A. Uhrlaub, who is desirous of doing work this year on his Master's degree with a major in physical education.

Mr. Uhrlaub received his A. B. degree here in 1921, and since then has done work in summer school. He has taught at Salina for a number of years, but resigned his position this year. He was captain of my basketball team in 1921, and is a very fine coach.

Although Mr. Uhrlaub did not have a major in physical education in his undergraduate work, he has done a large amount of work in this field, and has taught biological sciences and physiology. He has had 15 hours of Education, 5 hours of Comparative Anatomy, 5 hours of Zoology, a 3 hour course in the Teaching of Biological Sciences. All of this, of course, will show up on his transcript.

We feel that Mr. Uhrlaub will be a very suitable candidate - serious, purposeful, a good student. I shall appreciate your serious consideration of his application.

Sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

Lawrence, Kansas,
September 14, 1939.

Dr. Forrest C. Allen,
Director of Physical Education,
University of Kansas,
Lawrence, Kansas.

Dear "Phog":

In accordance with our conversation
the other day I am writing this letter.

I would like to enter the University
to get a Masters Degree in the theory and prac-
tice of teaching physical education. I am un-
certain as to my qualifications and if I can do
this work in one school year. That I must.

I have an A.B. Degree granted from the
University in 1921 and did summer school work on
Education in 1922, 1923 and 1924. In the summer
of 1936 I took two subjects at the Denver Universi-
ty- namely extra curricular activities and Correc-
tive and Preventative Physical Education.

It is necessary that I have work of some
kind to take up work in the University and unless
I can secure a part-time job, I will be unable to
attend. I am out of work and have no money with
which to start to school- but determined to make
good in my school work.

I would appreciate whatever information
you may give me in regard to my ability to do this
school work in one year and also what job I may
have to help finance my way through.

Hoping to hear from you soon, I am,

Sincerely yours,

Ernst A. Uhrlaub

Ernst A. Uhrlaub,
805 Ohio.

UNIVERSITY OF KANSAS
LAWRENCE

DEPARTMENT OF PHYSICAL EDUCATION

Memo from Dr. Elbel regarding Mr. Uhrlaub:

Has had 15 hours of Education, but has not had all the prerequisites as we have them listed. However, he has had Comparative Anatomy (5 hrs.), Zoology (5 hrs.), a 3 hr. course in the Teaching of Biological Sciences, School Hygiene, Corrective and Preventive Physical Education. He has taught 18 years, and has taught Biological Sciences and Physiology.

Although he has not had a major in Physical Education, he has done a sufficient amount of work in this field, and I feel that we should waive the existing prerequisites. Had a long talk with him and feel he would be a very suitable candidate.

Committee on prerequisites for a combined Master's degree in Education and Physical Education recommended the following:

Undergraduate work shall include:

15 hours of Education

8 hrs. techniques or theory and practice

10 hrs. hygiene, physiology, zoology or anatomy*

3 hrs. involving history, principles or philosophy of P. E.

*Agreement between Deans Stouffer and Schwegler and Dr. Allen regarding prerequisite of 10 hours of biological science, 5 hours of which shall be physiology or anatomy -- see Dr. Allen.

February 28, 1940.

Mr. Ernst A. Uhrlaub,
742 Ohio Street,
Lawrence, Kansas.

Dear Ernst:

I want to compliment you on the fine educational attitude you have toward competitive athletics. The fact that you have been in the high school system so many years makes you especially valuable to us in dealing with our freshman players.

If all varsity coaches had your experience and background as well as your understanding sympathy with boys they would be able to render a far greater service.

This letter is written to you after observing you in your work with our boys. Your attitude is most commendable and I want you to know that I appreciate it very much.

Very cordially yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

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March 20, 1940

DIRECTOR OF PHYSICAL EDUCATION:

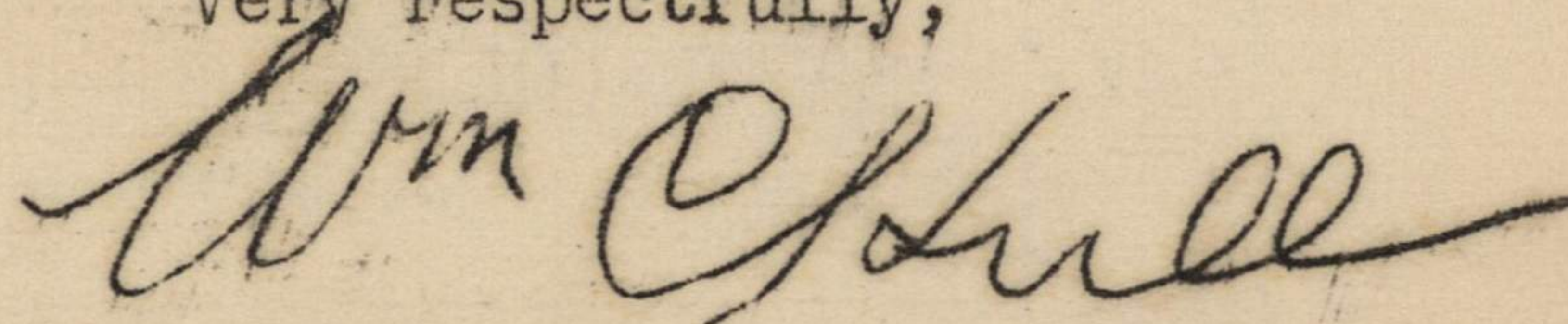
Dear Sir:

The Commission is planning to announce in the near future an examination for the trainee positions of student physiotherapy aide at the Army Medical Center (Walter Reed Hospital) in Washington, D. C. These positions were formerly outside the classified service and were therefore not filled through open competitive civil-service examination. They have now become subject, under Executive order, to the civil-service examination requirements.

The Commission would appreciate it greatly if you would bring notice of this approaching examination to the attention of your graduating students who will complete, or have completed, a full four-year course leading to a bachelor's degree with major study in physical education. The examination announcement will contain the specific requirements. Copies will be sent to you as soon as they are ready for issuance.

By direction of the Commission:

Very respectfully,

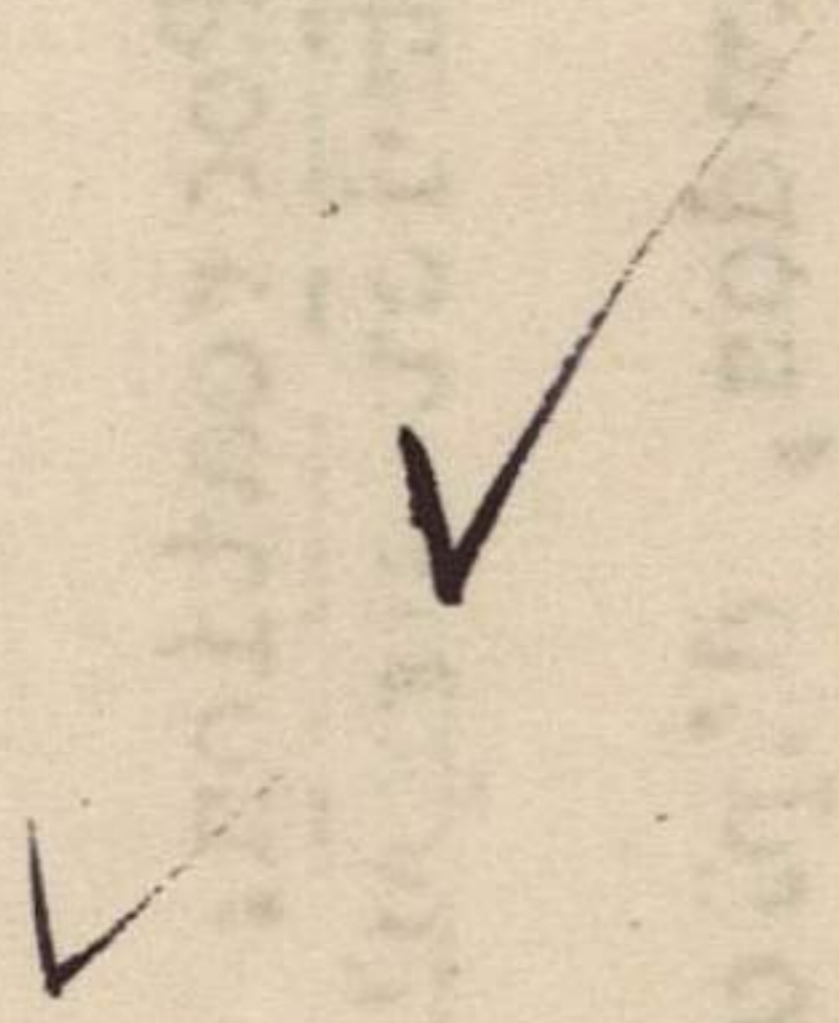


Wm. C. Hull
Executive Assistant

Otto D. Unruh,
Bethel College,
Newton, Kans.

Glad to come April 3. Presume last year's
arrangements satisfactory. Send details.

Forrest C. Allen.



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KAD6 43 NT=N NEWTON KANS MAR 28

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DR FORREST C ALLEN=

:PLEASE FWD

COULD YOU COME AND GIVE US A TALK AT OUR BUFFALO
BARBECUE APRIL THIRD ALL SPORT FANS ARE ANXIOUS TO HAVE
THE ALL AMERICAN BASKET BALL CLUB BACK AGAIN ALL THE LUCK
IN THE WORLD SATURDAY NIGHT PLEASE WIRE ANSWER FRIDAY
NOON COLLECT=

=OTTO D UNROE BETHEL COLLEGE.

Handwritten signature: Otto D. Unroe

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MEMBERS OF THE UNIVERSITY OF KANSAS BASKETBALL TEAM=

CARE DR F C ALLEN, COACH=

HOTEL CONTINENTAL KANSASCITY MO=

TONIGHT THE EYES OF THE SPORTS WORLD WILL BE FOCUSSED ON YOUR EFFORTS. EVERY LOYAL KANSAN IS CONFIDENT THAT YOU WILL PLAY YOUR HEARTS OUT AND THAT YOU WILL WIN. IN OUR OPINION YOU COMPRISE THE GREATEST BASKETBALL TEAM IN KANSAS HISTORY. WIN OR LOSE, YOU HAVE WON FOR YOURSELVES A PLACE IN THE HEART OF EVERY JAYHAWK SPORTS FAN.

TONIGHT WE EXPECT TO SEE THE SWELLEST BUNCH OF YOUNG MEN IN THE COUNTRY PROVE THEY ARE THE SWELLEST BASKETBALL PLAYERS IN THE COUNTRY =

ENTIRE STUDENT BODY & FACULTY OF THE UNIVERSITY OF KANSAS.

FACULTY OF THE UNIV OF KANSAS EX WORDS

April 16, 1960.

Mr. Paul R. Dick, Principal,
Utica Rural High School,
Utica, Kansas.

Dear Principal Dick:

Thank you for your very kind invitation to speak at your commencement on May 15th. I am sorry that I am scheduled to speak at LaCygne on that evening at their high school commencement, but I have Tuesday, the 14th, available if you should desire me on that date.

I regret that I have this conflict in dates.

Very sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

UTICA RURAL HIGH SCHOOL

PAUL R. DICK, PRINCIPAL

UTICA, KANSAS

April 12 1940

Dr. F. C. Allen
University of Kansas
Lawrence, Kansas

Dear Dr. Allen:

I am writing to inquire if you would be available as a Commencement speaker here on Wednesday night May 15. If so what would your charges be including the expenses?

I would appreciate hearing from you by return mail.

Yours very truly

Paul R. Dick

Paul R. Dick
Prin.

*La Cygne
(tentative)*

A STUDY OF THE AMOUNT OF ACTIVITY OF HIGH
SCHOOL PLAYERS IN THE GAME OF BASKETBALL

BY

ERNST A. UHRLAUB

A.B., University of Kansas, 1921.

Submitted to the Department
of Education and the Faculty
of the Graduate School of the
University of Kansas in partial
fulfillment of the requirements
of the degree of Master of Arts.

.....
Instructor in charge

.....
For the department

May 1940

ACKNOWLEDGEMENT

I wish to express sincere thanks and appreciation to Dr. E. R. Elbel, Associate Professor of Physical Education, University of Kansas for his constant help; to Mr. E. A. Thomas, Commissioner of the Kansas State High School Activities Association, for many suggestions and his permission to secure data at the Kansas State Class "A" Tournament at Topeka; to Mr. H. V. Porter, Secretary of the National Basketball Committee of the United States and Canada; to Dr. Forrest C. Allen, Director of Physical Education, University of Kansas, for his kindly suggestions; and to the group of students of the University of Kansas for their assistance.

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A STUDY OF THE AMOUNT OF ACTIVITY OF HIGH
SCHOOL PLAYERS IN THE GAME OF
BASKETBALL.

1

INTRODUCTION

Since there is a prevailing impression that the game of basketball has been so speeded up by the elimination of the center jump that the game is injurious to high school players, this study was determined to check the activity of high school players during games and from the data secured certain conclusions relative to the amount of time spent in action.

PROBLEM

An attempt was made to determine: (1) the amount of activity of high school players in the game of basketball, based upon the following criterion for activity; that all movements executed by a player at a speed greater than a walk, whether on offense or defense; (2) the amount of elapsed time necessary to play the game; (3) to draw a comparison between the activity of the player and the total elapsed time of the game and its quarters; and (4) a comparison of the State Class "A" Tournament players with the other groups of players.

In a recent press report Coach Lew Andreas (1) of Syracuse University stated that the new rules of basketball make the game harmful to high school athletes. Apparently there is very little literature available relative to the amount of movement or activity made by high school basketball players. The limited number of studies reviewed dealt mostly with the possible physiological harm to players or with college and university players exclusively. Lloyd Messersmith and M.S. Corey (2) made a study of the distance a college player moves in the game of basketball, in which they recorded the distance each player traveled on defense and on offense separately by observation and by the use of reproduction of the basketball court and also an electrical recording device. This report showed that college players traveled a distance of two and one half miles per game. This study was made under the rule involving the center jump. Lloyd Messersmith worked with Paul Fay (3) in 1938 and found that college players traveled a distance of approximately four miles per game under the present rule (without the center jump). This is an increase of one and a half miles for distance traveled per game.

An article, published by Dr. James Naismith, (4) inventor of basketball, concerning high school basketball players has a definite bearing upon this subject. His study showed (a) that there were no ill effects physiologically on high school players playing in a State Basketball Tournament; (b) the time consumed to play high school basketball games observed in Kansas City, Missouri.

Many articles have been written within the last two decades upon the effect of athletic contests on heart ailments or upon the health of the players. There is general agreement that there is no reason to believe that the heart of any normal boy is endangered by strenuous physical exercise such as basketball.

Regarding certain physiological effects on players a study was made by a group of medical doctors in Rockford, Illinois (5). Throughout the season each player was carefully examined before and after each game of basketball. The summary of this study is as follows:

"1. The hearts of all the players were functioning well after each game and no excessive fatigue was noted in any Rockford High School athlete."

"2. In no case was there any tendency to a heart rate in excess of the physiological norm after any of the games."

"3. No untoward symptoms were complained of by any of the players after any of the games."

"4. There were no observable differences in physical endurance between the lightweight and heavyweight teams."

"5. The electrocardiographic studies of three players made before and after one of the games were found to be within the physiological limits of the norm."

"6. The medical insurance, and physical education literature offers no conclusive evidence of cardiac or blood vascular damage to the individual that can be attributed, per sec., to his athletic activity providing his heart was normal before entering the training period for athletic contests."

Mr. Daniel Chase (6) in Hygeia, states that, "If contests are well controlled and limited to those who are physically fit, relatively little danger may be anticipated from athletic competition. On the contrary, both moral and physical conditions are likely to benefit by the training."

Fred V. Hein and A.S. Randall, M.D. (7) report a study on the effects of the center jump elimination in basketball. This study involved the effect of the loss of weight, pulse recovery, and blood pressure on high school players. These writers concluded that through the elimination of the center jump over a period of time, basketball might be dangerous to some players.

The survey study conducted by the Athletic Journal (8) under the heading "What they're saying about basketball without the center jump" Made by university coaches, is summarized herewith; (a) less fouls are made; (b) less injuries; (c) increase play from six to eight minutes per game; and (d) some coaches say men fatigue faster therefore, need for better substitutes.

Nancy Miner, Pauline Hodgson and Anna Espenschade, (9) who made a study of the distance traversed and the time spent in active play in women's basketball, found that advanced players were active about 30 per cent of the total time consumed in playing two-court games.

PROCEDURE

In collecting the data for this study the movements of players at each position were timed by the use of stop watches and recorded on time sheets. Timers were instructed to start the stop watches as soon as the activity began and to stop the watches when activity ceased. This same procedure was repeated whenever a new activity was begun and was continued until the quarter ended. The amount of movement was recorded separately for each quarter. Each timer was assigned a specific position which included the starting player, his substitute or substitutes. In addition to this, the total elapsed time of quarters, intermissions and the entire game was recorded.

The difference between the beginning and ending time of each quarter indicated the elapsed time per quarter. Wrist watches were used for this type of timing. By the same method, the total elapsed time for the entire game was obtained; and the difference between the total elapsed time of the four quarters and that of the entire game produced the total time for intermissions, time between quarters and the half combined.

All the timing done for this study was of games in the State of Kansas. One stop watch was used in timing league and non-league games, district and regional tournaments, two in the county league tournament and five in the State Class "A" Tournament. When five watches were used every position on one team was timed.

One hundred and forty-nine positions were timed in sixty-one games. The games were divided as follows: 13 from league

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and non-league games; 7 from a county league tournament; 10 from one of the 49 district elimination tournaments; 15 from one of the regional elimination tournaments and 16 games from the State Class "A" Tournament.

A county league tournament is one held by members of a county league. These tournaments must be played at least two weeks before the state district elimination tournament. The district and regional tournaments are conducted on an elimination basis to qualify teams for the Class A and Class B state tournaments. Class B schools are those whose enrollments are less than 200; Class A, 200 or more. District tournaments are held for Class B teams only; whereas in the regionals both Class A and Class B schools compete but in separate brackets. In the State of Kansas, during the 1939-1940 season, 13 regional tournaments were held for Class A teams, and 15 for Class B teams. Sixteen teams competed in the State Class "A" Tournament.

DATA

Timing of Individual Positions

Data were collected on 149 individual cases (each case being the starting player, substitute or substitutes for one position.) From these data it was found that the average activity of a high school player in a game of basketball varied from 2 minutes and 1.6 seconds for the first quarter to 2 minutes and 17.2 seconds for the fourth quarter. That the activity increased per quarter as the game progressed is indicated in Table I. Of the 149 cases observed, the average amount of activity for an entire game was 8 minutes and 31.4 seconds which is 31.4 seconds more than

one-fourth of the actual time taken to play the regular game of 32 minutes.

TABLE I - THE AVERAGE ACTIVITY OF ALL PLAYERS BY QUARTERS
AND FOR THE ENTIRE GAME IN MINUTES AND SECONDS

NO. OF INDIVIDUAL CASES	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	ENTIRE GAME
149	2:01.6	2:04.1	2:08.5	2:17.2	8:31.4

The total number of cases was divided into positions as follows: 56 forwards, 38 centers and 55 guards.

FORWARDS

The average activity of forwards is indicated in Table II in seven groups.

For all positions timed, the movements of forwards vary slightly from quarter to quarter. The total amount of action per game was 9 minutes and 6 seconds. The greatest increase of activity in any quarter was made by the forwards of Team III in the State Class "A" Tournament. (F-6 fourth quarter, Table II.)

The least action by any group of forwards in any quarter was 1 minute and 51.1 seconds (F-6 second quarter, Table II.), and the greatest, 2 minutes and 31.4 seconds (B-24 second quarter, Table II.)

Forwards of Team I in the State Class "A" Tournament presented the greatest amount of activity for that particular tournament, and those of Team III the least; yet, the average activity of all forwards in this tournament showed less action than all other forwards combined. This probably was due to the better technique

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used by members of teams qualified to enter the State Class "A" Tournament.

TABLE II * AVERAGE ACTIVITY FOR FORWARDS BY QUARTERS AND FOR THE ENTIRE GAME IN MINUTES AND SECONDS

NO. OF CASES	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL FOR ENTIRE GAME
*A-56	2:11.0	2:16.6	2:16.8	2:21.6	9:06.0
B-24	2:14.3	2:31.4	2:25.7	2:23.8	9:35.2
C-32	2:08.5	2:05.5	2:10.0	2:20.0	8:44.0
D- 6	2:24.5	2:22.0	2:18.5	2:24.1	9:29.1
E- 6	1:57.0	2:10.3	2:02.1	2:16.3	8:25.7
F- 6	1:55.5	1:51.1	2:04.6	2:19.3	8:10.5
G- 6	2:09.3	2:04.3	2:08.8	2:10.6	8:33.0

*A- All cases for that position.

B- All cases except those of State Class "A" Tournament.

C- State Class "A" Tournament.

D- Team I)

E- Team II)

F- Team III)

G- Team IV)

Teams playing throughout the State Class "A" Tournament.

CENTERS

The average activity of centers in quarters and in the entire game can be found in Table III. This table shows that the centers playing in the State Tournament moved nearly 2 minutes less per game than those timed in other games. This was perhaps because the centers of the former groups played the post type of offense, that is, remaining in position near the basket to shoot

or to pass the ball to another player and not just running around for an opening.

There was little change in the average activity of all centers from one quarter to another. Among centers, however, one will find that activity does not increase as the game advances in quarters. In most cases less action appears during the second quarter. The centers of the four teams playing throughout the State Class "A" Tournament, with the exception of Team I, did not move as much as two minutes per quarter.

TABLE III - AVERAGE ACTIVITY FOR CENTERS BY QUARTERS AND FOR ENTIRE GAME IN MINUTES AND SECONDS

NO. OF CASES	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL FOR ENTIRE GAME
*A- 38	2:12.0	2:09.7	2:15.8	2:27.1	9:04.6
B- 22	2:23.8	2:23.9	2:28.9	2:38.0	9:54.6
C- 16	1:55.9	1:50.3	1:57.8	2:12.0	7:56.0
D- 3	2:05.0	2:19.0	2:17.0	1:58.0	8:39.0
E- 3	1:34.0	1:26.6	1:32.0	1:44.0	6:16.6
F- 3	1:39.0	1:38.0	1:43.0	1:54.0	6:54.0
G- 3	2:01.0	1:34.0	1:40.0	2:11.0	7:26.0

*A- All cases for that position.

B- All cases except those of State Class "A" Tournament.

C- State Class "A" Tournament.

D- Team I)

E- Team II)

F- Team III)

G- Team IV)

Teams playing throughout the State Class "A" Tournament.

The average activity of guards by quarters and for the entire game, is shown in Table IV. The average for an entire game for 55 guard positions throughout the whole season was 7 minutes and 35.1 seconds. Here we find a group of six cases whose average movement for a complete game was only 5 minutes and 22.8 seconds, which would mean their activity amounted to only 1 minute and 20.6 seconds for each quarter played. At no time during the State Class "A" Tournament did any guard of Teams I, II, III or IV move as much as 2 minutes per quarter. Their range of action per quarter ran from 1 minute and 15.3 seconds (E-6, third quarter, Table IV) to 1 minute and 50.1 seconds (D-6, first quarter, Table IV). Whereas, the average of all cases was from 1 minute and 46.8 seconds to 2 minutes and 5.6 seconds per quarter. In the State Class "A" Tournament teams generally used set plays, therefore, their guards usually passed the ball around for an opening instead of running or dribbling.

TABLE IV - AVERAGE ACTIVITY OF GUARDS BY QUARTERS AND FOR THE ENTIRE GAME IN MINUTES AND SECONDS

NO. OF CASES	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL FOR ENTIRE GAME
* A- 55	1:46.8	1:47.7	1:55.0	2:05.6	7:35.1
B- 23	1:58.3	2:02.8	2:14.2	2:24.4	8:39.7
C- 32	1:38.5	1:34.3	1:41.3	1:52.3	6:46.4
D- 6	1:50.1	1:37.1	1:43.0	1:45.1	6:55.3
E- 6	1:57.0	1:23.5	1:15.3	1:17.0	5:22.8
F- 6	1:19.8	1:21.1	1:47.1	1:57.5	6:25.5
G- 6	1:29.3	1:27.1	1:37.6	1:49.1	6:23.1

- *A- All cases for that position
- B- All cases except those of State Class "A" Tournament.
- C- State Class "A" Tournament.
- D- Team I)
- E- Team II) Teams playing throughout the
- F- Team III) State Class "A" Tournament.
- G- Team IV)

The activity of players by positions was less in the State Class "A" Tournament than in those of all other games timed. The same held true for the amount of time consumed for completion of a game. The forwards of State Class "A" Teams showed much greater movement than the centers and guards.

Taking the combined average time of movements of positions for the State Class "A" Tournament players as compared to all others timed and comparing the results, we find that the activity of the latter group was 4 minutes and 43.1 seconds greater per game. - with the greatest differences between the center positions.

It may be interesting to note the difference of the total average activity for an entire game consumed by Teams I, II, III and IV playing in State Class "A" Tournament with those teams playing outside State Class "A" Tournament. Comparison is made by the use of Tables II, III and IV. Referring to section "B" of Tables II, III and IV and multiplying the total average activity for an entire game for forwards and guards by 2 and adding these figures to the total average activity for an entire game for centers, (2 forwards, 2 guards and 1 center compose the playing personnel of a basketball team) we get the total amount of activity that was consumed by the