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A Study of Soccer Goalkeeper Restarts Comparing Two Methods of Throws and Two Methods of Kicks

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A STUDY OF SOCCER GOALKEEPER RESTARTS COMPARING TWO METHODS OF THROWS, AND TWO METHODS OF KICKS

(TITLE)

BY

KENNETH JOEL LEVY

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
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CHAPTER I

INTRODUCTION

The popularity of soccer as an intercollegiate and interscholastic sport is growing at a rapid rate in the United States. Books on the subject are helpful to the coach, but there is a lack of information on the training of the goalkeeper. There has been little scientific investigation published regarding the many skills required of the goalkeeper. An understanding of the skills of the game is important to advance the coaching methods and techniques of soccer. For this reason, research on goalkeeper restarts was initiated.

THE PROBLEM

Statement of the Problem

It takes many years to develop a skilled goalkeeper. The learning process must start with the basic skills. One of the basic skills consists of the ability of the goalkeeper to put the ball back into play once he has gained possession of the ball, which is known as a restart. Restarts by throw or kick are basic to the initiation of an attack by the offensive part of the soccer team. Two methods of kicks are used, the drop kick and the punt.

There are also two methods of putting the ball back into play by using an overhand throw; the bent arm throw and the straight arm throw. A concern of soccer coaches is to determine which of the methods, within each type of restart, would be the best method to teach his beginning goalkeeper. The method that results in better accuracy and/ or distance for a given athlete is important to the development of a competent goalkeeper.

Purpose of the Study

The purpose of the study was to compare the two methods within each type of goalkeeper restart, to determine which had greater accuracy and/or distance.

Hypothesis

There is no significant difference among the methods within each type of goalkeeper restarts.

Need for the Study

Goalkeeping restarts are very important to the initiation of a good attack. There was limited research on the methods and effectiveness of restarts. If a significant difference does exist, it would be of importance to the development of a goalkeeper. Walter Winterbottom (28, p. 146) was concerned with the accuracy of goalkeeper restarts. If the goalkeeper restart is directed to an opponent, then the offensive attack is lost. Allen Wade (27, p. 231) mentioned that the goalkeeper, after receiving the ball, starts the

attack. He must be accurate with his throws, and long and accurate with his kicks.

Delimitations

The study was conducted at Eastern Illinois University. The forty volunteers were randomly divided into two groups of twenty members each, representing the two methods within the two types of restarts. Each subject was a member of one kick and one throw group. Group A performed the punt kick, group B the drop kick, Group A utilized the straight arm throw, and was referred to as Group A_1, and Group B used the baseball type throw and was referred to as Group B_1.

The experiment was conducted during the 1972-1973 school year. The study involved two phases. Phase I was an instructional and practice stage, and phase II was the testing period.

The study was conducted in the Charles P. Lantz Physical Education, Health and Recreation Building fieldhouse.

Limitations

American football and baseball are played nationwide by junior high school boys. Exposure by the subjects to the punt kick (football) and baseball type throw (baseball) was expected. The drop kick and straight arm throw would be relatively new skills.

The height of the Charles P. Lantz Physical Education, Health and Recreation Building fieldhouse was thirty

feet, which allowed for no kick or throw greater than that height.

Definition of Terms

1. Restart - After control of the ball was established by the goalkeeper, he then puts the ball back into play by a throw or kick.

2. Legal restarts - A restart is legal if the goalkeeper bounces the ball before taking five steps and does not move outside the penalty area with the ball in his control.

3. Instep - The instep is the part of the foot extending from the base of the toes to the ankle (8, p. 58).

4. Methods of restarts - Each of the following four methods was performed in accordance with the laws governing the soccer restarts.

A. Kick

1. The punt restart involved kicking the ball at knee height, before it touches the ground. Two steps are taken followed by kicking the ball with the instep of the kicking foot.

2. The drop kick was performed by kicking the ball after it is dropped and bounces from the ground. The ball is contacted with the kicking foot six to eight inches from the ground with the instep to keep the ball in a low trajectory.

B. Throw

1. The straight arm throw requires throwing overhand with the elbow extended throughout the motion.

2. The baseball type throw involved throw-

ing overhand with the elbow flexed during the motion.

SUMMARY

The goalkeeper is the last line of defense. He is also the first on offense, after he gains possession of the ball. A high degree of skill in restarting the ball is an advantage to the offensive unit. Many areas within soccer have not been studied in depth. The playing techniques of a goalkeeper are least understood by many coaches. To facilitate the development of goalkeepers, a study of the methods within the types of goalkeeper restarts was scientifically studied.

CHAPTER II

REVIEW OF RELATED LITERATURE

Learning the goalkeeping position in soccer takes many years of practice and game experience. The goalkeeper who has mastered the skill of restarting the ball, will give an advantage to the offensive unit and will take the pressure off an opponent's constant attack. A goalkeeper can restart the soccer ball by a kick or throw. There are two methods within the two types of restarts. When kicking, a goalkeeper can either punt or drop-kick the ball. If he decides to throw the soccer ball, he can use the baseball or straight arm methods. In coaching a beginning goalkeeper the supervising personnel should know the advantages and disadvantages of the methods of restarts. Little research has been published which compares the kicking methods or the throwing methods regarding accuracy and/or distance. Scientific research in this area would give a better understanding of which methods of restarts should be taught to the beginning goalkeeper.

The literature has been written in three basic areas: material concerning the advantages of each method of restart; techniques of performing restarts; and information on different aspects of restarting the soccer ball.

KICK VERSUS THROW

Throw

Ian Bailey and Francis Teller (2, p. 59) noted that throwing the ball is more accurate than the drop or punt kicks. A goalkeeper's throw can almost outdistance the kick.

Hubert Vogelsinger (26, p. 52), Earle Waters, and others (13, p. 65) found that novice and experienced goalkeepers can throw with greater accuracy than they can kick.

Frank DiClemente (9, p. 92) felt that it is better strategy to throw an accurate pass, than to kick the long distance ball.

Walter Winterbottom (28, p. 8) not only indicated the advantage of accuracy, but also the quickness of the throw over the kicks.

Peter Bonetti (3, p. 118) and Bobby Moore (20, p. 76) agreed that the short, quick throw to an undefended teammate will start the attack of the team more effectively than a long kick.

John Yasinac (29, p. 42) indicated that the throw to the halfback would have better results than a kick downfield.

Bernard Joy (16, pp. 76-77) opposed the long high clearance because the ball is likely to be headed and controlled by the opponents.

Bernard Joy (16, p. 127) reported that West Bromwich

liked the short pass from the goalkeeper, because the other restarts are likely to be intercepted.

Dana H. Getchell (12, p. 54) believed, the throw that is low, accurate and quick will not be intercepted. The kick is slow and inaccurate and this results in loss of possession.

Kick

Bernard Joy (16, p. 127) related the kick philosophy of Wolves' manager Stan Cullis. A long kick starts the momentum of the attack before the opponents can set their defense.

John Allen's (1, p. 61) strategy was to leave five forwards at midfield to receive the long kick, thereby outnumbering the defense.

Conrad Lodziak (18, pp. 135, 136) defended the use of the long kick by the attacking team forming a circle around the spot where the ball is headed. The strategy should result in possession of the ball.

Situations

Arpad Csanadi (8, p. 219) reviewed the value of each type of restart. Accuracy is more important than distance. A kick will bring distance, but not much accuracy. The throw will result in effective accuracy. There are certain situations for the use of the kick. Each restart used in the correct situation will result in a more likelihood of an effective attack.

Long Time

Paul Hawk, John Squires, and Earle Waters (13, p.65) preferred the baseball method of restart when there is no pressure on the goalkeeper. Goalkeepers should acquire the skill of throwing low and accurate with either hand.

Contrary to the previous authors, Douglas Stewart (25, p. 12) and John Caswell (6, p. 84) prefer the use of the punt kick if time permits.

Short Time

Matt Boxer and Julie Menedez (4, p. 57) indicated that if the goalkeeper is being rushed, either method of kick would be used to clear the ball to another member of the team.

Florence Hupprich (14, p. 10) stated that the throw should be used when the goalkeeper is being rushed. The throw is the faster method of restarting the ball away from the goal.

John Edgar Caswell (6, p. 84) and Hubert E. Coyer (7, p. 93) wanted the ball thrown well up field, away from the attack. It is the quickest method when the goalkeeper is being rushed by the opponents.

All Receivers Covered

The discussion of Paul Hawk, John Squires, and Earle Waters (13, p. 65) concluded that when all receivers in throwing range are covered the kick should be employed.

It is important that the goalkeeper can kick with either foot.

Conrad Lodziak (18, pp. 135-136) realized that at times all members will be covered by the defense. The goalkeeper should kick the ball into the opponent's half of the field.

Sustained Attack

Dana Getchell (12, p. 54), John McKeon, Melvin Schmid, and Irvin R. Schmid (19, p. 132) prescribed the kick when the opponents have launched a sustained attack. During this type of attack most of the opponents will be located in the offensive half of the field. A long kick will catch the defense out of position and a fast break opportunity will arise.

Other Situations

John McKeon, Melvin Schmid, and Irwin Schmid (19, p. 132) recognized other type situations that a kick might occur in a game. When it is raining, control of the ball is difficult. Another situation is on windy days when the strategy of a kick is to play for the fast break.

DROP KICK VERSUS PUNT KICK

Drop Kick

Arpad Csanadi (8, p. 219), Richard Nelson (21, p.23) Paul E. Hawk, John Squires, and Earle Waters (13, p. 66) agreed that the drop kick had two decisive advantages over

the punt kick. The ball, just as it rebounds from the ground, is kicked. This action gave the ball a low trajectory. A ball that travels low is easy to control. The drop kick has better accuracy than the punt kick.

Stanley Smith (23, p. 57), and Hubert Vogelsinger (26, p. 259) found that because of the low trajectory the ball reached the receiver faster.

An explanation of the effect of the wind on the ball was discussed by Ian Bailey and Francis Teller (2, p. 49). The low trajectory of the drop kick reduced the influence of the wind on the ball. The punt kick had the disadvantage of the high trajectory, thereby causing a long period of exposure to the wind.

Punt Kick

Arpad Csanadi (8, p. 219) gave attention to the condition of the ground. If the ground is uneven, the determination of the ball's bounce, cannot be predicted. An unpredicted bounce can result in loss of possession of the ball, which can then be intercepted by the opponent.

TECHNIQUES OF RESTARTS

Baseball Throw

According to Arpad Csanadi (8, p. 217) the best type of restart is by a throw; and the most successful throw is the baseball method. Arpad Csanadi has described the total sequence as follows:

> The ball is held by the hand and lifted to approximately head-height. The palm supports the ball from behind with the fingers moderately outspread. The other hand is held low and obliquely to shield the ball. The weight is carried by the rear leg as the ball is lifted behind the head.
>
> The action is started by the throwing arm. The sole of the opposite foot presses against the ground in front of the body. The other hand leaves the ball as it is carried behind the head and is then held loosely in front of the chest. The throwing arm is brought forward from the shoulder simultaneously with the forearm flying forwards and downwards. Before the ball leaves the hand, the final impetus is given by moving the wrist vigorously to ensure guidance and accuracy. As the ball leaves the hand, the weight of the body is transferred to the front leg. While the hand follows through, the leg in the rear takes a pace forward as a result of the swing.(8, pp. 217-218).

The baseball method of restart was briefly discussed by DiClemente. The author gave special attention to body positioning during the total movement of the throw. DiClemente relates body positioning as follows:

> Get the full swing of the arm; at the start of the throw put full weight of the body on the rear foot, rear leg slightly bent; front foot almost directly in line and in front of rear foot; body is leaning slightly backward; to get the full benefit of the body and arm start forward motion with chest; follow through with head and foot pointing in direction the goalie wants the ball to go, weight on front foot (9, pp. 92-94).

Bailey and Teller (2, p. 59), Kirby and Sullivan (17, p. 42), and Winterbottom (28, p. 149) support the previous statements when they described body positions and follow-through of the baseball method.

John McKeon, Irvin Schmid, and Melvin Schmid (19, pp. 130-132) realized that to keep possession of a long baseball throw the ball must be kept low and accurate.

Savin and Sushkov (22, p. 38) described the baseball

method of throw and stated that an accurate throw could be accomplished at fifty-yards.

Straight Arm Throw

Arpad Csanadi does not describe in detail the straight arm method of throwing. Csanadi (8, p. 218) reports a major fault in this method. The ball is in a wide arc and cannot be guided with any accuracy. Csanadi does not recommend that this method be used by goalkeepers.

Punt Kick

Ian Bailey and Francis Teller (2, p. 45) covered the punt kick and said that the kick achieves maximum power when the kicking leg is straight on impact.

Hubert Vogelsinger (26, p. 259) explained that a ball kicked with the instep would give maximum distance and accuracy.

John McKeon, Irvin Schmid and Melvin Schmid (19, p. 132) gave attention to body position during the punt kick. The body should be bent forward and the ball kicked low to the ground to keep the ball in a low trajectory.

If the trajectory of the ball is too high, then the ball is either kicked too far in front of the body, or the ball is kicked too high off the ground, is a belief of Paul Hawk, John Squires and Earle Waters (13, p. 65).

Drop Kick

Ian Bailey and Francis Teller (2, p. 47) described

the mechanics of the drop kick and gave the following explanation:

(1) Just as the ball bounces from the ground it should be kicked.

(2) Place the non-kick foot parallel to the anticipated bounce of the ball, to keep the ball low.

(3) The body weight and knee of the kicking foot should be located over the ball.

Hubert Vogelsinger (26, p. 259) said that the ball must be kicked with the instep of the kicking foot for accuracy and distance.

RESTARTS

Different Types

Ted Smits (24, p. 42), and John Yasinac (29, p. 42) confirmed that there are two basic types of restarts: (1) the kick and (2) the throw.

It was also reported by Tommy Docherty (10, p. 40) that the kicking and throwing restarts also start the attacking move by the goalkeeper.

In a similar discussion of the restarts by Dana Getchell (12, p. 20), it was suggested that a backboard be used. The goalkeeper should strive for low accurate throws and kicks while increasing the distance from the backboard.

The Attack

John McKeon, Irvin Schmid and Melvin Schmid (19, p. 130) realized that the throw should be accurate, for the goalkeeper to be an effective attacking player. A goalkeeper should develop the ability to pick out the player in the best position, and to start the attack by throwing the ball to him.

Allen Wade (27, p. 231) agrees on the description of the attacking goalkeeper as stated by John McKeon, Irvin Schmid and Melvin Schmid; but also wants the goalkeeper to be accurate with his kicks.

Bernard Joy (16, p. 32) envisions the goalkeeper as the player that starts the attack on every restart. The restart can be either a kick or throw.

John Allen (1, p. 45) felt that a well placed restart by the goalkeeper could be turned into a goal at the other end.

Walter Winterbottom (28, p. 155) wants the goalkeeper to kick and throw the ball accurately. An inaccurate restart will waste the efforts of teammates and increase his own work.

Bill Jeffrey (15, p. 43) stated that an attack can be started even from a corner kick by the opponents.

A good throw, according to Dana Getchell (12, p. 20) should be thrown low and drop over the shoulder of the player. The low throw method will help a player to avoid trapping and turning.

Matt Boyer and Julie Menendez (4, p. 55) are in disagreement with the previous statement. They believe the ball should be placed to the feet of the receiving player.

Goalkeeper Initiates the Fast Breat Attack

Ronald Gerwin (11, p. 66) outlines four basic situations in which the goalkeeper can be the key for the offensive attack:

(1) When three or more forwards are in the penalty area.

(2) After an attempted corner kick that is caught by the goalkeeper.

(3) When the ball is over the sidelines and a throw-in occurs.

(4) When the goalkeeper saves a penalty shot.

Positioning of the Restart

John Callaghan (5, p. 39) and Hubert E. Coyer (7, p. 93) agreed that the ball should be thrown upfield to the wingmen. If the ball is intercepted, the danger is not immediate. The ball thrown straight upfield would cause great pressure on the goalkeeper if intercepted.

Hubert Vogelsinger (26, pp. 258-259) not only wants the ball thrown to the wingmen, but it should be thrown to the opposite side from which the opponents attacked. The area opposite the attack would not be congested.

Dana H. Getchell (12, p. 54) does not agree with the previous authors. The ball that is cleared behind the half-

backs from the restart, places pressure directly on the defense of the opponents.

SUMMARY

The literature seems to indicate the following: (1) The throw has a noticeable advantage over the kick; (2) In most of the texts on soccer the authors indicate a preferred use of the drop kick rather than the punt kick; (3) After gaining possession of the soccer ball the goalkeeper is the one who initiates the attack.

CHAPTER III

METHODOLOGY

The study was conducted to determine if any significant difference existed among the two methods from each type of goalkeeper restart. The four methods included a comparison of the punt kick and drop kick and comparison of the straight arm throw and baseball type throw. The two types of restarts are used in the various situations that occur on the soccer field during a game. To initiate a quick offensive attack a throwing type restart would be used. Counteracting a sustained offensive attack from the opponents, the goalkeeper would employ a kicking type of restart. Limited research has been attempted to determine the most effective method within each type of restart. Scientific research is important to a greater understanding of soccer by the coach, player and spectator.

RESEARCH PROCEDURES

Subjects

The forty subjects were seventh, eighth and ninth grade male volunteers from the physical education classes at

Buzzard Junior High School. Students of the junior high school did not have any previous coaching at the goal-keeping position.

Grouping

The forty volunteers were randomly divided into two groups of twenty members each, representing the two methods within the two types of restarts. Each subject was a member of one kick and one throw group. Group A performed the punt kick, Group B the drop kick, Group A utilized the straight arm throw, and was referred to as Group A_1, and Group B used the baseball type throw and was referred to as Group B_1.

Testing Area

The area for the kicking test was drawn on the fieldhouse floor with chalk (Figure 1). A penalty area line, one yard long, was marked at one end of the fieldhouse. A line extended from the midpoint and perpendicular to the penalty line to a point sixty yards from that line. It was identified as the accuracy line. To set the sidelines, a mark was placed twenty-seven and one half yards to the left and twenty-seven and one half yards to the right of the extended accuracy line and perpendicular to it. The sidelines were drawn from the mark to the respective sides of the one yard penalty line. The measurement would ensure that the sidelines had one yard between them at the penalty area line and angled so that they were fifty-five yards

wide, at a distance of sixty yards from the penalty line.

The throwing area was superimposed on the kicking area. A shoe was placed lengthwise, fifteen and twenty-five yards from the penalty line and a circle with a radius of one foot was marked around the shoe. Each shoe was placed on the accuracy line. The shoe represented a player's foot and the one foot radius circle displayed the movement of the foot while the player maintained balance and control.

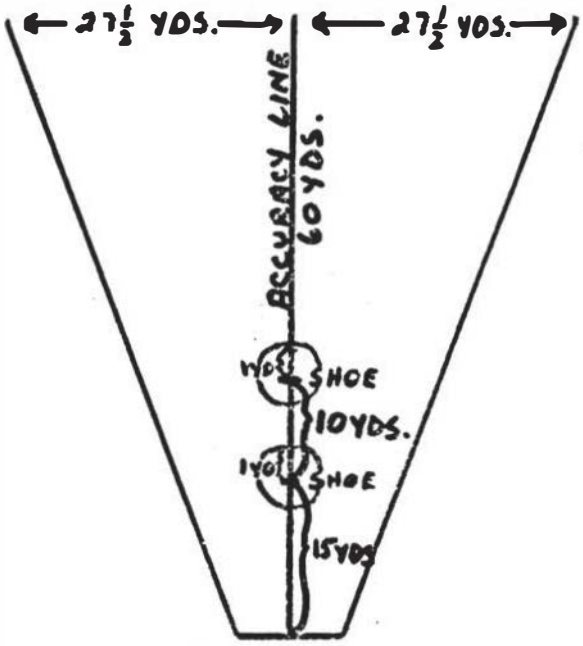


Figure 1

Testing Area

The first test was designed to represent a penalty line and legal area of kick similar to a soccer field. The distance of fifty-five yards was chosen because it was the maximum usable width of the Lantz field house. Shorter kicks would require greater accuracy to be effective and therefore, the tapering design was chosen for the legal area.

The second test was designed to represent a penalty line and legal area of throw similar to a soccer field. The distance of fifteen yards and twenty-five yards was chosen because relatively accurate overhand throws are made by goalies at these distances.

Testing Phase

The test procedure contained two phases. The first was an instructional phase and contained the teaching of the skills needed for the subjects to participate in the investigation. The second was the testing phase and included the subjects performing the skills and the measurements of their efforts.

PHASE I

Group A used the punt kick restart. Each subject was instructed to hold the ball in both hands (Figure 2). The first step is short as compared to the second step, allowing for the backswing of the kicking foot. Extension at the arms and hands are necessary throughout the motion, until the arms are parallel to the ground and the ball is released.

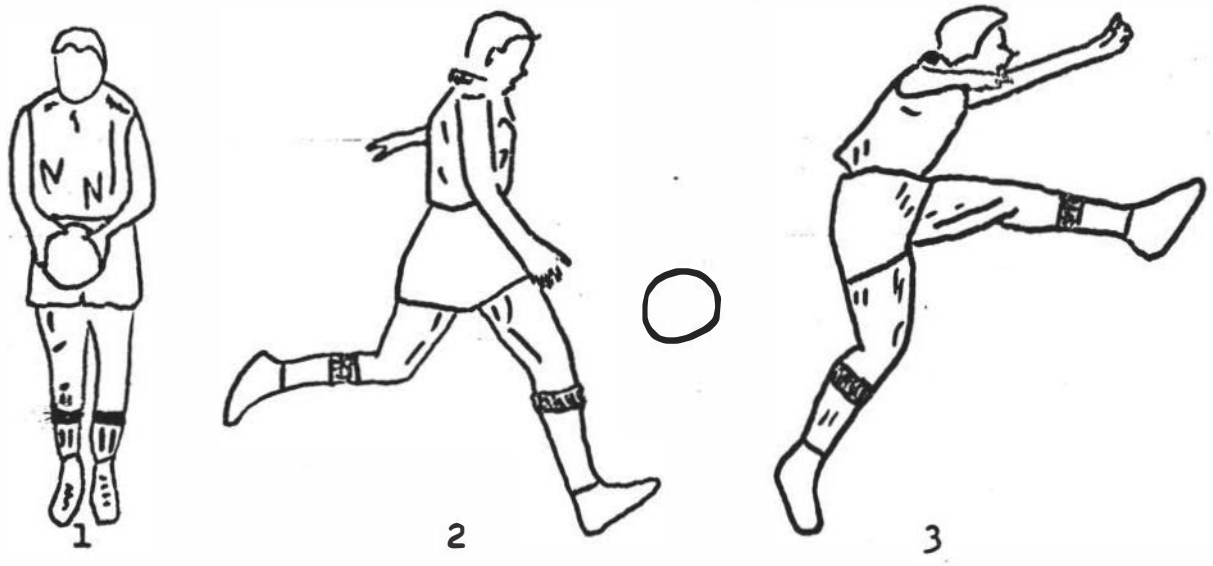
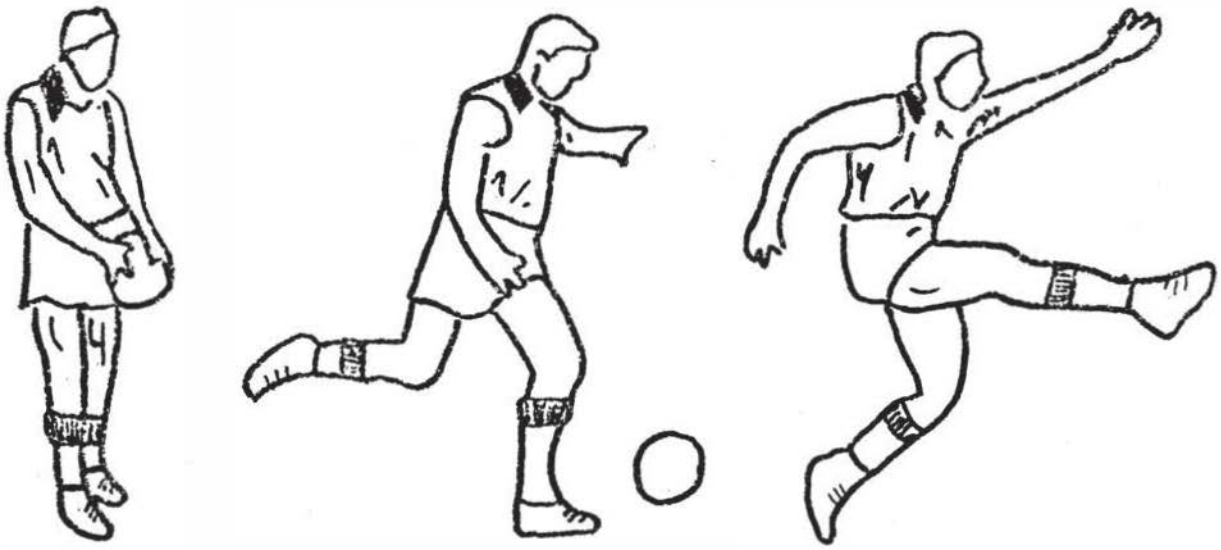


Figure 2

Punt Kick

The ball is dropped at the completion of the second step and the start of the backswing of the kicking leg. As the ball is dropping the hips start the action that swings the kicking leg forward. At the moment of impact the eyes are looking at the ball. The ball is contacted with the instep of the foot at knee height with the knee slightly

bent. After impact, the knee is fully extended and the leg is allowed to follow-through. The kicking leg is placed on the ground after completion of the follow through. During the kicking motion the arms are swung sideways to a position perpendicular to the trunk of the body and parallel to the ground. The trunk is slightly tilted backward at the beginning of the forward swing of the kicking leg. A legal kick is made behind the penalty line, but the body could travel over the line after contact between the ball and foot (8, pp. 59-61).



1 2 3

Figure 3

Drop Kick

Group B performed the drop kick method. Each subject was instructed to hold the ball in both hands (Figure 3). The first step is short as compared to the second step, allowing for the backswing of the kicking foot.

Extension of the arms and hands are necessary throughout the motion, until the arms are parallel to the ground and the ball is released. The ball is dropped at the completion of the second step and the start of the backswing of the kicking leg. As the ball is dropping, the hips start the action that swings the kicking leg forward. At the moment of contact the eyes are looking at the ball. The ball is contacted with the instep of the foot just as it bounces from the ground, with the knee slightly bent. After impact the knee is fully extended and the leg is allowed to follow-through. The kicking leg is placed on the ground after the follow-through is completed. During the kicking motion the arms are swung sideways to a position perpendicular to the trunk of the body and parallel to the ground. The trunk is slightly tilted backward at the beginning of the forward swing of the kicking leg. A legal kick is made behind the penalty line, but the body could travel over the line after contact between the ball and foot (8, pp. 59-61).

Group A, utilized the baseball type throw method of restart. Each subject was instructed to hold the ball in both hands at chest level (Figure 4). The ball is lifted to head height, with fingers comfortably spread and palm supporting the ball from behind. The non-throwing hand is placed on the side of the ball nearest to the thumb of the throwing hand. As the ball is taken behind the head, the non-throwing hand is placed across the chest and simultaneously the weight is shifted to the back leg. The action

of the throwing arm is in coordination with a flexed elbow. The forward motion is started by the pushing down of the back foot which shifts the weight forward. The elbow is moved in front of the shoulder and hand moves forward and down. As the hips and shoulders rotate forward the ball is guided by the follow-through of the wrist. The feet remain behind the penalty line until the ball is released. Then the feet could move over the penalty line (8, pp. 217-218).

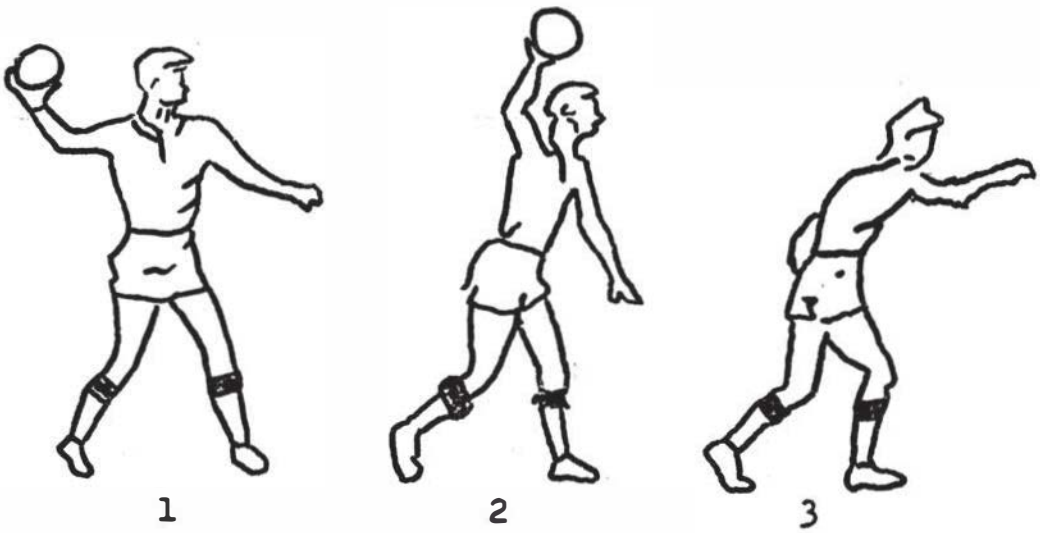


Figure 4

Baseball Throw

Group B, was instructed to use the straight arm throw. Each subject was instructed to hold the ball in both hands at chest level. The ball is lifted to head height and is moved as far back as the extended elbow allowed. The leg on the same side as the throwing arm supports the weight. As the non-throwing hand drops off the ball to the area of

the chest, the ball is moved to the back position. Then the forward motion starts as the weight of the body is shifted to the opposite leg. The arm is moved over the shoulder, with the elbow extended. To complete the throw, the ball is guided by the follow-through of the wrist. A legal throw is possible even if the feet go over the penalty line after the ball is thrown.

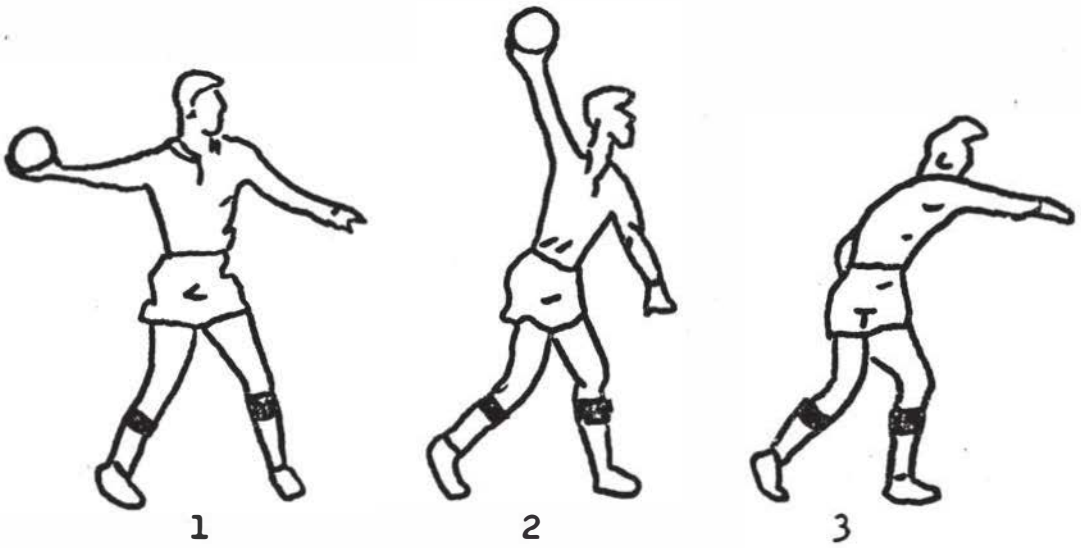


Figure 5

Straight Arm Throw

Step and line violations were explained to all subjects. Whenever a violation occurred, the trial was repeated. Step violations occurred when more than four steps were taken without bouncing the ball. Line violations included stepping over the penalty line with the ball.

When the subject performed the skill in a manner satisfactory to the investigator, he was dismissed.

PHASE II

Prior to the test, all subjects were allowed five practice trials. During the testing, ten legal trials were recorded. If the trial was illegal or landed outside the permissible area, it was not recorded and another trial taken. A one-hundred foot tape measured the kicking and throwing distances. All kicking distances were rounded to the least nearest foot. All throwing distances were rounded to the greatest half foot. The kicking test for accuracy and distance was measured by subtracting the distance from the accuracy line from the total distance of the kick. Accuracy of the throwing test was found by measuring the distance from the center of the accuracy circle to where the ball hit the ground.

Treatment of Data

The mean, mean difference, and standard deviation were determined for each of the four groups. Comparisons were performed between Group A and Group B; Group A_1 and Group B_1. With each comparison the difference in the mean scores was tested by using the t-test. The .05 level of confidence was considered as the level for a significant difference to exist.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF THE DATA

The study was conducted to determine if any significant difference existed among the two methods from each type of goalkeeper restart. The subjects were forty male volunteers from the physical education classes at Buzzard Junior High School. The volunteers were randomly divided into two groups of twenty members. Each group performed one method of kick and one method of throw. Due to an injury of one of the subjects a comparable replacement was selected by the instructor at Buzzard Junior High School. The kicking test consisted of ten legal trials and were measured for accuracy and distance. The throwing tests included ten legal trials to each of two distances, forty-five and seventy-five feet. Throwing skills were tested for accuracy.

The study contained two phases. The first was an instructional phase and contained the teaching of the skills needed for the subjects to participate in the investigation. The second was the testing phase and included the subjects performing the skills and the measurements of their efforts. To facilitate the computation of the data, the kicking distances were measured to the least nearest foot, and the

throwing distances measured to the greatest one-half foot from the target. A throwing score of zero was considered perfect, with greater values less desirable when considering accuracy. The student t-test was used with each comparison to find the difference in the mean scores. The .05 level of confidence was considered as the level for a significant difference to exist.

RESULTS OF PHASE II

The two groups were identified by letters A, A_1 and B, B_1 which represented the four types of goalkeeper restarts investigated in the study. Group A performed the punt kick, Group B the drop kick, Group A utilized the straight arm throw, and was referred to as Group A_1, and Group B used the baseball type throw and was referred to as Group B_1.

The scores for each subject have been placed in the Appendix. The mean differences of the kicking groups are represented in Table 1; those for the throwing groups are in Table 2. A student t-test of 2.021 was determined to be the level for a significant difference to exist at the .05 level of confidence with thirty-eight degrees of freedom.

GROUP COMPARISONS

Group A had a mean kicking distance of 65.50 feet and Group B a mean kicking distance of 57.43 feet. The test scores resulted in a student t-test of 2.56 which was considered a significant difference at the .05 level of confidence (Table 1).

Table 1

Comparison of the Mean Scores Between Group A (Punt Kick) and Group B (Drop Kick)

	MEAN DISTANCE	MEAN DIFFERENCE	S.D.	T-TEST
Group A	65.50	8.07	10.06	2.56*
Group B	57.43		9.35	

* Significant at the .05 level

At the throwing distance of forty-five feet Group B_1 had a significantly lower score (3.03 feet from target) than Group A_1 (4.71 feet from target). The student t-test of 2.26 was considered significant at the .05 level of confidence for a difference to exist (Table 2).

A comparison between Group A_1 and Group B_1 of the throwing test of seventy-five feet indicated no significant difference at the .05 level of confidence. The mean distance from the seventy-five foot target was 10.18 feet for Group A_1 and 8.30 feet for Group B_1. The student t-test was 1.63 which was not significant at the .05 level of confidence.

Table 2

Comparison of the Mean Scores Between Group A_1 (Straight Arm Throw) and Group B_1 (Baseball Method Throw)

	MEAN DISTANCE FROM TARGET	MEAN DIFFERENCE	S.D.	T-TEST
Group B_1(45 Ft.)	3.03	1.68	1.08	2.26*
Group A_1(45 Ft.)	4.71		3.06	
Group B_1(75 Ft.)	8.30	1.88	2.76	1.63
Group A_1(75 Ft.)	10.18		4.20	

* Significant at the .05 level

DISCUSSION AND SUMMARY

A greater mean distance was attained with the punt kick than with the drop kick. Although a significant difference existed, two points of observation should be included: (1) The drop kick had a lower trajectory than the punt since the drop kicks never hit the 30 foot ceiling,

whereas twenty-seven punt attempts were illegal trials because they hit the ceiling; (2) The mean difference was 8.07 feet between kicking methods, but the drop kick was a recently learned skill as compared to the punt kick.

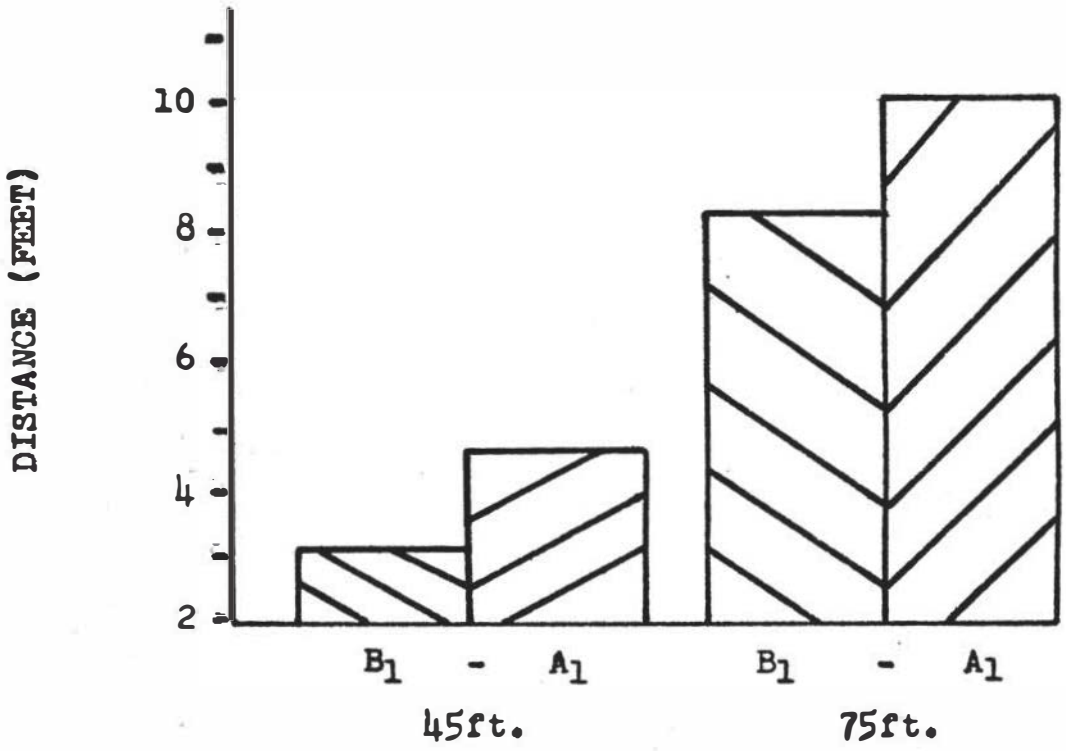


Figure 6

Comparison of the Mean Distance Between Group A_1 and Group B_1 at Forty-Five and Seventy-Five Feet

As shown in figure 6, throwing at forty-five feet demonstrated a significant difference in greater accuracy of the baseball method of throw over the straight-arm throw. When throwing at seventy-five feet no significant difference occurred.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The study was initiated to determine the most effective type of goalkeeper restart. The skills included the punt and drop kicks, and the baseball and straight-arm types of throws. Forty Buzzard Junior High School Students volunteered to participate in the study. The students were randomly divided into two groups of twenty members. Each group was taught a throwing and kicking skill.

The study was divided into two phases. Phase I included the teaching of one kicking method and one throwing method for subjects in each group. The investigator released the subjects when he was satisfied with their acceptable level of proficiency in the skills they were taught.

Phase II contained the testing and measuring of the distances that the subjects obtained from the trials they attempted. The test was conducted in the Lantz Building Fieldhouse. A record was made of ten legal trials that were performed by each subject. If the trial was illegal or landed outside the permissible area, it was not recorded as one of the ten trials.

CONCLUSIONS

Three conclusions are evident from the analysis of the test results:

1. The punt kick gives a greater mean distance than the drop kick.

2. The baseball method of throw is more accurate at forty-five feet than the straight-arm throw.

3. There was no significant difference in accuracy of throws by either method at the 75 foot distance.

RECOMMENDATIONS

Insight of goalkeeper restarts warrants the following recommendations:

1. An in depth study to compare accuracy for the two kicking methods of goalkeeper restarts.

2. An accuracy comparison of baseball and punt methods of goalkeeper restarts.

3. A cinematographic analysis and comparison of the soccer punt and drop kicks.

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APPENDIX

Table 3

Restart Results of the
Drop Kick
(Feet)

Kick	Pf	Go	Wi	Ca	Ro	Jo	Sa	Co	Kr	Ra
1	24	45	32	57	58	29	32	46	38	36
2	23	60	33	66	57	39	65	46	30	48
3	38	65	57	41	84	42	49	31	70	40
4	39	68	51	61	92	53	33	50	56	51
5	39	74	48	59	78	44	49	55	53	63
6	35	75	56	45	66	41	63	70	45	63
7	38	76	64	45	59	63	68	64	46	43
8	48	63	59	46	63	55	61	51	56	52
9	49	74	72	75	81	64	50	49	47	77
10	50	73	66	51	82	64	70	52	49	76

Table 3 (Continued)

Kick	Si	Tr	Sp	Cm	Fu	Hi	Li	Pe	St	Bu
1	19	48	22	50	33	48	20	43	88	48
2	27	60	59	69	53	45	41	36	71	72
3	30	70	65	76	61	57	52	54	101	79
4	49	64	55	69	66	79	32	87	41	84
5	54	85	66	81	73	77	46	79	79	79
6	56	78	73	85	61	21	80	103	40	25
7	61	71	68	101	58	46	80	44	32	72
8	54	65	64	75	81	57	48	61	29	73
9	49	58	56	75	90	60	41	81	71	98
10	48	36	66	75	92	76	26	69	66	3

Table 4

Restart Results of the Punt Kick (Feet)

Kick	Do	Mc	Sr	Ti	Ru	Hu	Za	Ss	Rd	Ri
1	47	44	66	51	36	41	51	46	34	38
2	50	43	76	54	52	65	53	45	39	65
3	49	59	69	55	60	70	59	46	55	56
4	55	59	70	65	57	57	60	47	75	52
5	53	56	69	58	45	67	63	54	72	61
6	63	65	92	65	37	48	68	73	64	63
7	68	57	71	73	37	69	58	60	60	76
8	64	63	91	64	37	73	49	63	49	77
9	69	49	69	78	38	72	34	79	60	79
10	68	62	79	76	31	67	54	78	35	66

Table 4 (Continued)

Kick	Th	Rp	St	Ma	Cl	Ea	El	Pr	Se	Sh
1	56	38	68	57	40	53	52	36	41	31
2	53	53	58	84	56	63	56	79	53	51
3	52	67	62	90	67	67	47	75	65	49
4	62	72	60	95	59	82	67	102	69	82
5	76	50	55	95	80	82	84	73	76	102
6	94	55	85	107	91	79	103	68	116	81
7	63	58	76	100	66	94	96	57	91	89
8	76	61	88	80	49	94	46	41	90	98
9	81	74	75	78	74	106	65	62	98	112
10	75	82	43	58	84	69	81	45	84	112

Table 5

Restart Results of the
Forty-Five Foot Baseball Method of Throw
(Feet)

Throw	Pf	Go	Wi	Ca	Ro	Jo	Sa	Co	Kr	Ra
1	0	5	4	1.5	2.5	2	4	3.5	1.5	9
2	3	2	9	2	1.5	0	0	4	5	4
3	2	4	5	2	2.5	0	0	2	1	2.5
4	8	3	7	1.5	4	4	5	0	2.5	1.5
5	3	3	6	5	2.5	9	1.5	5.5	.5	4.5
6	4	5	6	0	3	4	3.5	2.5	0	1
7	7	5	6	1	2	5	3	0	1	4.5
8	5	1	2	1.5	.5	4	0	3	4.5	3.5
9	5	3	3	3	2.5	4	3.5	1	7	4
10	6	4	5	0	.5	5	1.5	4.5	2	2

Table 5 (Continued)

Throw	Si	Tr	Sp	Cm	Fu	Hi	Li	Pe	St	Bu
1	2	4.5	5	4.5	11	1.5	4	3.5	.5	2
2	.5	3.5	1.5	1	5	3	2.5	3.5	.5	0
3	3	1.5	0	8	2	3	2.5	2	3.5	1
4	1.5	4	2.5	4	2	1.5	3.5	4.5	2	3
5	2.5	9	2.5	0	3	3	.5	2	3	2
6	3	10	.5	1.5	5	2	2.5	4.5	2	1
7	0	3	1	5	5	9	3.5	2.5	1	4.5
8	1.5	1	4	4	2	3	3.5	7	.5	1.5
9	2.5	4	4	5.5	5	5	1	0	1	.5
10	2	4.5	1.5	0	7	4	2	2	1	1

Table 6

Restart Results of the Forty-Five Foot
Straight Arm Method of Throw
(Feet)

Throw	Do	Mc	Sr	Ti	Ru	Hu	Za	Ss	Rd	Ri
1	10.5	.5	7	0	5.5	3	5.5	3	5.5	0
2	14	1	3.5	9	5	0	0	5	2.5	0
3	4	3	1.5	4.5	4.5	6.5	.5	2.5	3.5	4
4	.5	3.5	0	4.5	4.5	3.5	0	2	1.5	5
5	3.5	2	1	9	4.5	11	4.5	7	4.5	5
6	6	1.5	4	3.5	6	1	2	6	1	9
7	15	5	.5	3.5	5	4.5	2.5	0	5.5	3
8	13	3	2.5	4.5	3.5	7	4	4.5	4.5	10
9	5.5	1	1.5	3	0	10	5	1	.5	14
10	2	3.5	5	3	.5	8	3	3.5	5.5	12

Table 6 (Continued)

Throw	Th	Rp	St	Ma	Cl	Ea	El	Pr	Se	Sh
1	2.5	2	4	4.5	4.5	2	3.5	0	4	.5
2	2	4.5	7	2	7	4.5	3.5	.5	5	5
3	3	4	5	1.5	8	4.5	4.5	5.5	5	1.5
4	.5	6.5	2.5	0	9.5	2	3	5.5	9	1
5	1	5	3.5	5	2	8	3.5	1.5	5	2
6	7.5	9	2.5	3	2.5	5	4	2	3	1.5
7	1.5	1.5	2.5	3.5	9.5	7	2	1	1	2.5
8	3	2.5	.5	2	15	5	0	3	3.5	2
9	1.5	2	4	2	1.5	3.5	9	5.5	2	.5
10	0	5	3	0	3	2	4	3	4.5	2

Table 7

Restart Results of the
Seventy-Five Foot Baseball Method of Throw
(Feet)

Throw	Pf	Go	Wi	Ca	Ro	Jo	Sa	Co	Kr	Ra
1	16	10	8	6.5	10.5	8	15	9	10.5	9
2	18	4	8	4.5	11.5	16	4	5.5	15	9.5
3	8	5	15	7.5	11	19	17	11	9	4.5
4	6	11	5	.5	4.5	13	16	6	8.5	15
5	16	19	13	4.5	11	5	3	8	6.5	12.5
6	12	10	13	4	7	9	5	9.5	8.5	7.5
7	18	17	6	11	8.5	10	4	9.5	10.5	0
8	3	21	6	10.5	1	8	25	12.5	7.5	7.5
9	3	5	10	7.5	15	12	2	13.5	9	6.5
10	11	13	10	18	1.5	11	8.5	13	16	2

Table 7 (Continued)

Throw	Si	Tr	Sp	Cm	Fu	Hi	Li	Pe	St	Bu
1	11.5	20	11.5	0	4	1	8.5	1	2	6
2	6.5	10.5	6	8.5	7	1.5	10	8.5	3	7.5
3	10.5	19	10.5	5	1	5.5	13.5	5	4.5	5
4	8	10	8	1.5	4	2.5	12	.5	.5	5
5	5.5	11.5	9.5	4	7	4.5	7.5	5.5	1.5	1.5
6	5	23	8	6.5	6	10	12.5	5	6.5	4.5
7	10.5	9	18	11.5	14	9.5	13	1	7	4.5
8	14.5	10.5	12	2.5	14	5.5	9	3.5	5	4.5
9	3.5	15.5	27	9.5	13	7	2.5	5.5	1	6
10	10.5	7.5	.5	1.5	9	5	11.5	2.5	6.5	2.5

Table 8

Restart Results of the
Seventy-Five Foot Straight-Arm Method of Throw
(Feet)

Throw	Do	Mc	Sr	Ti	Ru	Hu	Za	Ss	Rd	Ri
1	19.5	7	16	20	25.5	12.5	9.5	6.5	10.5	4
2	12	16.5	20	13	23	12	15	9.5	13	7
3	8.5	7	8	4.5	26.5	19	15	11.5	11.5	15
4	10.5	18.5	19	9.5	12.5	19	15	19.5	15	12
5	8	14.5	6.5	4	23	10	11	14	12.5	8
6	12	7.5	11.5	8.5	19	20	12	4.5	5.5	22
7	22	11	10	5	19	6	11.5	5	6.5	13
8	11	11	14	13	18	10	10.5	12	6.5	12
9	21	6.5	5.5	12.5	23	18	10	5.5	6	10
10	16	8.5	1.5	3	23.5	11.5	24.5	5	6	9

Table 8 (Continued)

Throw	Th	Rp	St	Ma	Cl	Ea	El	Pf	Se	Sh
1	2	12.5	12	7.5	18	7.5	16	5	7	7
2	10	10	10.5	3	4	6.5	10	5.5	6.5	3
3	7	10.5	10	5.5	3.5	10	16	14	9	10.5
4	10.5	16.5	12	7.5	3	5	6	5	8.5	7.5
5	4.5	16	12	2	2.5	5	8.5	7	9.5	4.5
6	14	9.5	6.5	4.5	4	11	5.5	7	5	4
7	7	11.5	5.5	1.5	12	2	7	2	6	5.5
8	14	9	5	3	11.5	10	10	3	7.5	9.5
9	6.5	13	7	1.5	2	11.5	8	7.5	7.5	10.5
10	4.5	12.5	0	2	5	1	3.5	6	8	7.5

VITA

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The writer was born in New York City, New York on August 22, 1946. He attended Evander Childs High School, where he won letters in track, swimming and basketball. As a junior, he achieved second place in the New York City Diving Championship.

In 1964, he enrolled at Eastern Illinois University, Charleston, Illinois. While attending Eastern, he earned four letters in soccer.

In 1968, he married Pamela Kight of Allendale, Illinois. Children, Gwenn Levy was born on December 16, 1970, and Dawn Levy was born March 6, 1972.

After receiving the Bachelor of Science Degree, the writer was employed one year as physical science instructor at Jackson Junior High School in Orlando, Florida. While at this position, he was head swimming coach.

He was employed for three years as general science instructor at Beardstown High School in Beardstown, Illinois. While at this position, he was sophomore football coach, golf coach and developed and directed the first intramural program.

In 1972, he received a graduate assistantship at Eastern Illinois University. His duties consisted of assisting with the soccer program, assisting in the Physiology laboratory and supervisor. He completed all requirements for the Master of Science in Physical Education in May, 1973.