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Tubbs, Jeffrey Lynn

A COMPREHENSIVE MANUAL OF BASKETBALL STATISTICS

Middle Tennessee State University

D.A. 1982

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A COMPREHENSIVE MANUAL OF BASKETBALL STATISTICS

Jeffrey Lynn Tubbs

A dissertation presented to the
Graduate Faculty of Middle Tennessee State University
in partial fulfillment of the requirements
for the degree Doctor of Arts

May, 1982

A COMPREHENSIVE MANUAL OF BASKETBALL STATISTICS

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ABSTRACT

A COMPREHENSIVE MANUAL OF BASKETBALL STATISTICS

by Jeffrey Lynn Tubbs

This manual was designed for individuals involved with teaching courses in basketball dealing with theory, technique, and coaching, of which record-keeping techniques are a vital component. Definitions and regulations concerning the tabulating of basketball statistics are presented along with illustrations and suggestions by which the data may be recorded and organized for future rapid retrieval. Continuous statistics kept during the game, individual records, team records, and miscellaneous information useful in team publicity guides are viewed in an in-depth manner.

The manual concludes with a self-evaluation section. Questions and selected computations drawn from information contained in the earlier chapters are included to determine if the reader has internalized the data.

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Chapter 1

INTRODUCTION

All too often, and for various reasons, basketball statistics at different levels of competition are kept in an inaccurate manner. With an extremely limited number of sources available from which the statistician can learn precise and comprehensive recording techniques, the individuals charged with this duty have received, in many instances, their instruction in a very cursory manner with little thought given to the accuracy of such information. This commonly results in basketball records that are inaccurate, incomplete, and unrepresentative of the true performance of the individual and the team.

There are those who would argue that the need for accuracy is not important if records are kept solely for the purpose of supplying the coach with information concerning a team. These individuals would imply that accuracy is important only when the information is used to compare individual and team performances with others on similar competitive levels, because errors could falsely reward or hinder a player or team in the quest for recognition.

In refuting this argument it should be noted that a coach will likely use the statistical information to determine starter/reserve status, playing time, and team awards--all of which may be more important to the player than league, state, or national honors. Any inaccuracy here could result in morale problems and undermine those values the coach is attempting to teach. As long as the effort is going to be put forth to record basketball statistics, it seems reasonable that these statistics should be kept in an accurate and somewhat standardized manner.

The purpose of this manual is to serve as an instructional guide for the keeping of the many facets of basketball statistics and as a reference for a variety of forms and charts that may be used in the tabulation and permanent recording of these statistics. By combining these segments in the same manual, this effort will endeavor to provide a convenient reference source for those interested in improving their record-keeping techniques.

This manual is intended for five groups of individuals. First, for the person who teaches courses in basketball coaching theory, this book is provided as an aid by which techniques for keeping statistics can be transmitted to and understood by the student. The manual, as a primary or supplemental text in the classroom, should prove quite

beneficial to the student regardless of the individual's aspirations concerning the game of basketball.

Second, it is provided for the basketball coach for use in the instruction of managers and statisticians in the area of record-keeping. Whether the coach verbally passes on the information gleaned from this manual to the workers or provides them with the manual for their own personal study, the publication should enable the coach to make better use of time in other areas and still insure accuracy in the team's statistics.

Third, the manual is provided for both the novice and experienced media person. Hopefully, it will aid in the expansion of their knowledge and enable them to report more clearly and extensively to their readers.

Fourth, this manual is written for the basketball scout. Whether this individual is evaluating prospective players or analyzing future opponents, statistics will become more functional if the suggestions given in this publication are followed.

Finally, it is prepared for the fan whose interest in the game of basketball is strictly on the spectator level. It is hoped this manual will increase the understanding of, and appreciation for, the sport.

Information for inclusion in this manual has been gathered from various basketball textbooks and coaching

manuals, National Collegiate Athletic Association publications governing statistical regulations, personal files, and input from basketball coaches and sports information directors. The data have been arranged in chapters dealing with specific components of the statistical process.

Chapter 2 serves as a foundation for the remainder of the manual. A complete description is given of each suggested category of basketball statistics along with the official regulations governing the recording of each.

Chapter 3 deals with the mechanics of recording game statistics. Examples of forms and charts are offered that will aid the worker in spotting logistical problems that may arise when keeping statistics during the actual contest. The goal of this section is to provide clear and accurate statistical data that can be interpreted readily at the conclusion of the game and transferred quickly to other sources.

Game, seasonal, and career statistical information concerning the individual player is the main emphasis of Chapter 4. By following the suggestions offered in this section, a complete profile of any player in relation to teammates and opponents will be available.

Chapter 5 includes various methods for tabulating and recording team statistics. Actual performance of the team in certain games or seasons should become much clearer as the techniques explained in this chapter are utilized.

Records which do not fall under any of the previous categories are discussed in Chapter 6. The emphasis of this chapter is to suggest material that could be used in pre- or post-season promotional brochures to enhance the reader's understanding of the basketball program at the particular school or within the specific organization.

A self-study workbook is provided for the reader in Chapter 7. The basic principles of Chapter 2 are reviewed to expose individual strengths and weaknesses concerning the statistical process. In addition, problems are included to determine if the concepts presented elsewhere in the manual have been comprehended.

Unless otherwise noted, no relationship exists between the charts and graphs presented in this manual. All names and numbers are fictitious and serve only to illustrate the functionality of the specific chart or graph.

Chapter 2

DEFINITIONS AND REGULATIONS

Much of the information presented in this chapter has been taken from the 1980 Basketball Statisticians' Manual published by the National Collegiate Athletic Association. Supplemental clarifications have been included from the National Collegiate Athletic Association's Official Basketball Rules manual. Because it is not the responsibility of the official scorer or other statisticians to know the official rules of the game to the same degree as a referee, the entire spectrum of basketball rules has not been presented in this manual. However, it will benefit the record-keeper to be familiar with the game's rules in order to better understand and interpret the rulings of the referees as they affect the statistical system.

For the purposes of this manual, the following terms are defined and abbreviated. Where applicable, regulations and philosophies are included under specific categories to promote a clearer understanding of the statistical process.

Assist (AST.)

An assist is credited to a player who makes, in the judgment of the statistician, the principal pass contributing

directly to a field goal or an awarded score of two points.¹ Such a pass should be either a pass which finds a player free after the individual has maneuvered without the ball for positional advantage or a pass which gives the receiver a positional advantage not otherwise possible.²

An assist should be a conscious effort on the part of the passer to find an unguarded player or to help a guarded player work free. An assist should not be credited for a routine pass that happened to be followed by a field goal. There is no limit on the distance or type of shot made nor on the number of dribbles taken before the field goal is scored. An assist may be awarded for any pass in the scoring sequence; it does not necessarily have to be given on the final pass before the successful field goal.³

Assist Average (AST. AVG.)

The assist average is determined by dividing the total number of assists by the total number of games played.

¹1980 Basketball Statisticians' Manual (Shawnee Mission, Kansas: National Collegiate Athletic Association, 1979), p. 20.

²1980 Basketball Statisticians' Manual, p. 20.

³1980 Basketball Statisticians' Manual, p. 20.

Blocked Shot (BLS.)

Blocked shots are those attempted field goals that are deflected, at the initiation or soon after the initiation of the shot, by a defensive player resulting in a missed attempt by the shooter.

Blocked Shot Average (BLS. AVG.)

The blocked shot average is determined by dividing the total number of blocked shots by the total number of games played.

Dead-Ball

A dead-ball is caused by situations which become effective when the game is stopped due to a referee's whistle; the expiration of time in a quarter, half, or overtime period; or a successful field goal or free throw until the ball is subsequently put into play.⁴

Dead-Ball Rebound (DBR.)

A dead-ball rebound is credited whenever the ball is dead following an unsuccessful field goal or free throw attempt, before the conditions for an individual or team rebound are met.⁵ Dead-ball rebounds are not intended to

⁴1978 Official Basketball Rules (Shawnee Mission, Kansas: National Collegiate Athletic Association, 1978), p. 38.

⁵1980 Basketball Statisticians' Manual, p. 10.

reflect team rebounding ability and therefore are not included in the team total when figures are tabulated for conference or national statistical publications.⁶

A dead-ball rebound is credited as follows: (1) to the team which is entitled to the ball for a throw-in or a free throw attempt; (2) to the team which first gains control or is entitled to the ball after an ensuing jump-ball situation; (3) to the shooting team if the ball becomes dead due to the expiration of time; and (4) to the team into whose basket a defensive player tips an unsuccessful shot.⁷

Defensive Rebound (DEF. REB.)

A defensive rebound is credited to the non-shooting team or one of its players for controlling an unsuccessful shot attempt.

Disqualifications (DIS.)

Disqualifications are those games in which a player is dismissed from further participation due to a certain number of personal fouls.

Double Foul

A double foul occurs when two opposing players commit

⁶1980 Basketball Statisticians' Manual, p. 10.

⁷1980 Basketball Statisticians' Manual, p. 10.

personal fouls against one another at approximately the same time.⁸

Error (ERR.)

An error, also referred to as a turnover, is charged to a team which does not put a live ball in flight for an attempted field goal or free throw, that would count if successful, before the opposing team gains control of, or is entitled to the ball. The team must have control of the ball or be entitled to the ball before an error may be charged.⁹

If one player is judged, in the opinion of the statistician, to be primarily responsible for the error, that player is charged with the error. If no single player can be judged primarily responsible, or if the responsibility rests with someone not participating in the game, the team is charged with the error.¹⁰

An error should reflect the number of times a team, before attempting a shot, makes some type of mistake that results in the ball being awarded to the opponents. Only the offensive team can be charged with an error.¹¹

⁸1980 Basketball Statisticians' Manual, p. 10.

⁹1980 Basketball Statisticians' Manual, p. 10.

¹⁰1980 Basketball Statisticians' Manual, p. 10.

¹¹1980 Basketball Statisticians' Manual, p. 10.

Traveling with the ball, offensive fouls, 3-second violations, bad passes, offensive goal-tending, backcourt violations (with the exception of women's collegiate basketball), and stepping on the out-of-bounds lines are examples of errors. During the course of a game there will be some mistakes that will not be charged as errors because the ball was not turned over to the opposition.¹²

Error Average (ERR. AVG.)

The error average is determined by dividing the total number of errors by the total number of games played.

False Double Foul

A false double foul occurs when personal fouls are committed by both teams, with the second foul occurring before the clock is started following the first. The two fouls do not have to be committed by the same two players against one another.¹³

Field Goal Attempt (FGA.)

A field goal attempt is charged to an offensive player that shoots, throws, or tips a live-ball at the basket with the intent to score a goal.¹⁴ If the player is

¹²1980 Basketball Statisticians' Manual, p. 10.

¹³1978 Official Basketball Rules, p. 25.

¹⁴1980 Basketball Statisticians' Manual, p. 5.

fouled in the act of shooting and the shot is unsuccessful, or if there is offensive goaltending or offensive basket interference on the attempt, no field goal attempt is charged. An individual should not be charged with an attempted field goal if the shot is influenced by the illegal action of any player, including the shooter, unless the shot is successful.¹⁵

A field goal attempt must be charged when a player is fouled in the act of shooting and the shot is successful, or when a player shoots and is fouled after the ball is in flight. If there is doubt about whether the ball was in flight, the number of free throws awarded the shooter will help the statistician make the proper decision.¹⁶

Tip-ups count as field goal attempts if the player had sufficient control. Blocked shots count as field goal attempts if the ball was in flight before being blocked. If doubt exists as to whether the ball was in flight, the ruling shall be that it was.¹⁷ A field goal attempt is charged and a field goal made is credited on all shots where defensive goaltending or defensive basket interference occur.¹⁸

¹⁵1980 Basketball Statisticians' Manual, p. 5.

¹⁶1980 Basketball Statisticians' Manual, p. 6.

¹⁷1980 Basketball Statisticians' Manual, p. 7.

¹⁸1980 Basketball Statisticians' Manual, p. 7.

The following regulations apply to field goals scored in Team A's basket after last being touched by a player from Team B: (1) the touching is ignored if it was an attempt to block a shot by Team A and did not alter the ball's flight; (2) if the touching followed an attempt by Team A that had obviously missed, and there was no control by Team B, a field goal attempt is charged to Team A, but no field goal made is credited to any player; (3) if the touching was a deflection of a ball last in control of, but not shot by, Team A, no field goal attempt is charged to either team and no field goal made is credited to any player; and (4) if the ball was last in control of Team B, no field goal attempt is charged to either team and no field goal made is credited to any player. The player on Team B responsible for the goal is charged with an error. In (2), (3), and (4), the two points are accounted for by adding them to Team A's score in the area reserved for team rebounds and adding a footnote for explanation. A dead-ball rebound is then credited to Team A.¹⁹

Field Goal Made (FGM.)

A field goal made is credited to a player whose attempt from the floor results in a goal being counted or in

¹⁹1980 Basketball Statisticians' Manual, pp. 7-8.

an awarded score of two points, with the exception of when a defensive player tips the ball into the offensive basket.²⁰

Field Goal Percentage (FGM%)

The field goal percentage is determined by dividing the total number of field goals made by the total number of field goals attempted.

Free Throw Attempt (FTA.)

A free throw attempt is charged to any offensive player that shoots at the basket from the free throw line and no violation occurs during the shot. A free throw attempt is charged, and a free throw made is credited, if the shot is successful and there is an infraction by the defensive team. If the only penalized violation is because the ball failed to touch the rim, a free throw attempt is charged to the shooter.²¹ A player should not be charged with an attempted free throw if the shot is influenced by the action of any player, including the shooter, unless the shot is successful.²²

²⁰1980 Basketball Statisticians' Manual, p. 5.

²¹1980 Basketball Statisticians' Manual, p. 8.

²²1980 Basketball Statisticians' Manual, p. 9.

Free Throw Made (FTM.)

A free throw made is credited to any player whose attempt from the foul line results in the shot being ruled good.²³

Free Throw Percentage (FTM%)

The free throw percentage is determined by dividing the total number of free throws made by the total number of free throws attempted.

Game Efficiency Rating (GER.)

The game efficiency rating, developed by this writer for use in this manual, is determined by adding a team's defensive rebounds, assists, steals, and total points together, and from that total subtracting the team's missed shots (both field goals and free throws) plus the team's errors.

Game-Winning Baskets (GWB.)

Game-winning baskets are those points, either as the result of a field goal or a free throw, scored by a player that prove to be the eventual winning margin in a specific game.

Game Played (GAM.)

A game played is credited to a player for an appearance, of whatever duration, in a specific basketball contest.

²³1980 Basketball Statisticians' Manual, p. 10.

Individual Rebound (IND. REB.)

An individual rebound is credited to a player for a live-ball recovery of an unsuccessful field goal or free throw attempt. A player is credited with a recovery if: (1) the player gains control of the ball; (2) the player tips the ball in an attempt for a field goal; (3) the player tips or bats the ball to a teammate so that teammate or another teammate is the first to gain control; or (4) the player's team is entitled to the ball after a jump-ball situation which has been caused by the player simultaneously retrieving the ball with an opposing player.²⁴

A player should be credited with a rebound only if that player earned the rebound before the ball became dead. What happened after the ball became dead and what would have happened had the ball not become dead might be entirely different. The statistician should attempt to decide only what did happen and not what might have happened. Only if the statistician feels there was a possibility of player control should player control be awarded. Player control should not be considered if there was no possibility of

²⁴1980 Basketball Statisticians' Manual, p. 10.

any player gaining control of the basketball before it was ruled dead by the officials.²⁵

Live-Ball

A live-ball exists in all game situations where action proceeds and is not terminated by an official's whistle or by the expiration of time in a quarter, half, or overtime period.

Offensive Rebound (OFF. REB.)

An offensive rebound is credited to the shooting team or one of its players for controlling an unsuccessful shot attempt.

Personal Foul (FOU.)

A personal foul is charged to an individual player for illegal body contact, or other similar infractions, during the course of a game.

Rebound (REB.)

A rebound is credited to a player or a team each time a field goal attempt or free throw attempt is unsuccessful.

²⁵1980 Basketball Statisticians' Manual, p. 11.

Rebound Average (REB. AVG.)

The rebound average is determined, in the case of an individual, by dividing the total number of rebounds by the total number of games played. In the case of a team, the total number of individual and team rebounds is divided by the total number of games.

Rebounding Percentage (REB%)

The rebounding percentage of a team is determined by dividing its total individual and team rebounds by the total individual and team rebounds of the team and its opponents.

Scoring Margin (SMG.)

The scoring margin is the difference between a team's average points-per-game and the opponents' average points-per-game.

Steal (STE.)

A steal is credited to a defensive player who takes a live-ball away from an offensive player, intercepts a pass intended for an offensive player, or deflects the ball away from an offensive player so that a defensive teammate is able to gain control.

Steal Average (STE. AVG.)

The steal average is determined by dividing the total number of steals by the total number of games played.

Team Fouls (TEAM FOU.)

Team fouls are the team's accumulated total of its players' personal fouls.

Team Rebound (TEAM REB.)

A team rebound is credited to the team that is entitled to the ball when it has gone out-of-bounds after an unsuccessful field goal or free throw attempt, before player control is possible. A team rebound is not credited in situations where the ball has gone out-of-bounds after touching the basket supports, the back of the backboard, the ceiling, or the overhead equipment, unless it was touched by a player before going out-of-bounds.²⁶

No team rebound is awarded unless the ball has gone out-of-bounds without a player first being credited with an individual rebound. Because team rebounds do reflect team rebounding ability, both team and individual rebounds are included when tabulating figures for conference or national statistical publications.²⁷

Technical Foul (TECH.)

A technical foul is charged to players or the team for unsportsmanlike conduct or rule infractions.

²⁶1980 Basketball Statisticians' Manual, p. 10.

²⁷1980 Basketball Statisticians' Manual, p. 10.

Time-Played (TIME)

Time played represents a player's total amount of actual game participation, expressed in minutes and seconds.

Time-Played Average (TIME AVG.)

The time-played average is determined by dividing the total number of minutes and seconds by the total number of games played.

Total Points (PTS.)

Total points are determined by multiplying the total field goals made by two and adding the total number of free throws made.

Total Point Average (PTS. AVG.)

The total point average, or scoring average, is determined by dividing the total number of points scored by the total number of games played.

Chapter 3

GAME-BY-GAME STATISTICS

Probably the most important consideration when dealing with game-by-game statistics is having the proper number of helpers available to record the data. The number will be specific to each program, depending largely on how extensive the information is required to be.

The minimum number of statisticians needed to record the basic areas of the game is generally three. One individual would be assigned the official scorebook and would tabulate the following categories for both teams: personal fouls, field goals made, free throws made and attempted, total points, time-outs, and running score. The remaining two workers would be responsible for statistics selected from the following areas: time-played, field goals made and attempted, free throws made and attempted, assists, steals, errors, offensive and defensive rebounds, and blocked shots.

If more than three workers are available, the above responsibilities could be divided further or the additional helpers could serve as spotters. In either case, the less

responsibility any one recorder is given the more accurate the statistics.

The individuals selected for these duties should make the commitment to attend every contest, home or away, during the season. If only one game's figures are incomplete due to recorder absence, the accuracy of both team and individual statistics for the entire season will be affected.

Official Scorebook

The person charged with the responsibility of keeping the official scorebook has an important task. This worker, if keeping the scorebook for the home team, is designated as the official scorer and is technically a member of the officiating crew unless ruled otherwise by the referee. The official scorer has the following responsibilities: (1) record the field goals made; (2) record the free throws made and attempted; (3) keep a running summary of the points scored and the player that scored them (the time the scoring occurred is optional); (4) record the personal and technical fouls called on each player and each team; (5) record the time-outs charged to each team; (6) record the names and numbers of players who are to start the game and all substitutes who enter the game; and (7) summarize the game totals in the appropriate spaces (field goals made, free throws made and attempted, personal fouls, and total

points). The remaining statistical categories are optional inclusions.¹

In addition to this official recording, the official scorer is required to: (1) notify a team and its coach, through an official, whenever that team takes a fifth time-out; (2) signal the nearer official each time a team is granted a charged time-out in excess of the legal number; (3) signal the nearer official in each half when a player commits a common foul beginning with the team's fifth personal foul (for a game played in quarters), or seventh personal foul (for a game played in halves); (4) signal the nearer official when a player commits a fifth personal foul (in high school or college), or a sixth personal foul (in professional play); and (5) notify the nearer official when there is an infraction of the rules pertaining to submission of the roster, substitutions, or number of players.²

A sample game recorded in the official scorebook by the official scorer is seen in Figure 3.1. The charts shown are from the National Collegiate Athletic Association's Official Basketball Scorebook published in Shawnee Mission, Kansas. Although shown one below the other in this example,

¹1978 Official Basketball Rules (Shawnee Mission, Kansas: National Collegiate Athletic Association, 1978), p. 17.

²1978 Official Basketball Rules, p. 17.

Figure 3.1. OFFICIAL BOOK

TEAM MAPLEWOOD (14-4)						COACH JIM LARGENT						HEADLINE PETER ADAMS						SCORING BY PERIOD								FINAL SCORE													
TWIN BILL SANDERS						SCOUTER KEITH STERN						UMPIRE HERMAN WALKER						2B		34				100															
NO.		FOULS		PLAYER		FIRST HALF				SECOND HALF				OVERTIME		SUMMARY																							
						FIELD GOALS		FREE THROWS		FIELD GOALS		FREE THROWS		FG		FT		TS		LA		PTA		NO		PF		TP		A		TO		ST		M		P	
✓	10	✓	✓	✓	HINE, STEWART				2	0	0									1	8	2	3	2	4	4	1	6	8	4	2								
✓	14	✓	✓	✓	FRANKS, WALLY																																		
✓	20	✓	✓	✓	BONNER, SID	222			1	0	0	0	0	0	0					4	15	9	10	15	3	2	1	0	4	10	4	2							
✓	21	✓	✓	✓	BONNER, JERRY	2			1	0	0	0	0	0	0					4	13	10																	

[illegible]

the sheets would be side-by-side in the actual scorebook. The scorebook contains enough space for 32 basketball games.

The boxes at the top of each sheet provide general information concerning the game. A space is provided for the names of participating teams, coaches, and officials; date and location of the contest; attendance; and score by periods.

Below these boxes are columns for listing the numbers and names of players. First and last names should be included for all participants. In women's collegiate basketball, the players must be listed in ascending numerical order. The starters may be designated by a check beside their uniform number. When scoring for a high school, men's college, or professional game, the starters are generally listed first followed by the reserves in expected order of playing time. A technical foul will be assessed any team that plays an individual who is not listed in the official scorebook at the beginning of the game or one that is wearing a number different from the one listed in the official scorebook.

Personal fouls are recorded to the left of the player names by successively marking through the appropriate box. Fouls committed in different quarters or halves may be indicated by slashes in opposite directions or by solid division lines. An area also is provided for recording

player technical fouls. A check or an "X" is generally used for noting this infraction.

The largest part of the page is reserved for documenting the scoring accomplishments of each player. Successful field goal attempts are indicated by a "2" written in the row beside the player's name and under the heading for the appropriate half. All successful free throw attempts are symbolized by a "●", while unsuccessful attempts are represented by a "○". Specific free throw situations are indicated as follows: (1) unsuccessful free throw in a one-and-one free throw situation (○); (2) successful first free throw, unsuccessful second free throw in a one-and-one free throw situation (●○); (3) two successful free throws in a one-and-one free throw situation (●●); (4) two successful free throws in a two-shot free throw situation (●●); (5) two unsuccessful free throws in a two-shot free throw situation (○○); and (6) unsuccessful first free throw, successful second free throw in a two-shot situation (○●).

Each team's successful field goal attempts, and made and attempted free throws, should be totaled for both halves and recorded in the proper area at the bottom of the scoring section. Although not required, the scorer may wish to include the number of field goal attempts per half by each player in the lower right-hand column of the field goal boxes. As seen in Figure 3.1, this number is separated from

the successful field goal notations by a slash and may be obtained from other statisticians at the conclusion of the half or game. By including this information, the scorer will be able to determine each team's field goal percentage by halves as has been done for the free throw columns.

Summaries for various statistical categories are listed on the right of the sheet. Totals for field goals made (FG), free throws made (FT), free throws attempted (FTA), personal fouls (PF), and total points (TP) may be tabulated at the end of the game for each player from the information contained in the official scorebook. Final totals for other areas listed in this section may be obtained from the statisticians responsible for these categories. Because of space limitations, offensive rebounds are indicated by raised numbers in the rebound column and steals are listed in the extreme right-hand margin. Final game field goal percentage and free throw percentage may be recorded to the right of the dead-ball rebound boxes for each squad.

Team fouls are recorded in the same manner as personal fouls, with each personal foul counting as one team foul. Technical fouls do not count as team fouls. When the team foul section of the official scorebook has been completely crossed out in college play, the one-and-one free throw situation becomes effective for the opposing team in

that half. In high school basketball, the one-and-one situation takes effect after the fifth team foul of the half.

The area for recording time-outs provides space to indicate the amount of time remaining in the quarter or half when the time-out was called. Slashes in the opposite direction may be used to differentiate quarters or halves.

The space entitled "non-player data" may be used for pertinent information not recorded elsewhere. For example, technical fouls on players and coaches, ejection of players, and injuries may be included in this block of the scorebook.

The running score is located at the bottom of the page. The score for each team is crossed out as the game progresses and the uniform number of the individual scorer is recorded. The time remaining when the points were scored may be entered after each score or may be obtained from other sources and added at the conclusion of the contest.

Statistical summaries for individuals listed in the official scorebook but not participating in the game should be left blank. Players that receive actual playing time but register no data in any category should have zeros placed in their summary columns. This will aid the researcher when determining which team members saw game action.

After all of the columns have been totaled for both teams, the statistician should, as the final task, determine if the official scorebook is balanced. The first check

should be to ensure that total rebounds equal missed shots. This may be accomplished by adding Team A's missed field goal attempts and free throw attempts to Team B's missed field goal attempts and free throw attempts. This total should equal Team A's individual, team, and dead-ball rebounds plus Team B's individual, team, and dead-ball rebounds.

Once these figures have been confirmed, the official scorer should attempt to balance the official scorebook by adding Team A's missed field goal attempts and free throw attempts. This total should equal Team A's offensive rebounds (individual, team, and dead-ball) plus Team B's defensive rebounds (individual, team, and dead-ball). The same balance would be used in reverse when balancing from Team B's missed shots.

If any inconsistencies are found, the official scorer should confer with the other members of the statistical crew to search for the error. In many instances, a dead-ball rebound has been omitted and a check of the unsuccessful free throws uncovers the problem.

Recording Statistics During the Game

Once the statistics to be kept have been specified, the methodology of recording these figures while the game is in progress must be chosen. The procedure introduced here

is thought to be the simplest and most rapid available. No time-consuming search for statistical columns is required which should enable a higher degree of accuracy. The suggestions given in this section will be presented on the assumption that three statisticians are available in addition to the official scorer.

The duties of Statistician A would be to record the individual, team, and dead-ball rebounds of both teams and chart the playing time of all participants. Figure 3.2 shows how an individual responsible for these areas would record the data. Each half of the game is recorded on a separate sheet of paper to avoid confusion when tabulating the information.

The date, half, and team names appear at the top of each page. Names of players and their uniform numbers are listed under the appropriate team with an area for team and dead-ball rebounds. Each rebound is indicated by the letter "R" with offensive rebounds being circled "(R)". At the conclusion of each half, player rebounds may be totaled in the right-hand corner of each row and the team total shown at the bottom of the sheet.

Time-played is the second category for which Statistician A is responsible. These figures may be recorded above the players' names as shown in Figure 3.2. The first number given is the time the player enters the game; the

Figure 3.2. REBOUND AND TIME PLAYED SHEET

DATE: February 14, 1979

State	Ridgecrest
TEAM	TEAM

HALF: 1st

NO. AND PLAYER	REBOUNDS	NO. AND PLAYER	REBOUNDS
20-14:53; 8:21-0:00 12 Bond	R (R) R 3	20-17:21; 14:16-0:00 15 Sample	R R 2
20- 0:00 24 Reager	R R (R) R (R) (R) 6	20-10:07; 2:17-0:19 21 Simerly	R R (R) R 4
20-16:42; 9:16-7:20; 5:02-0:00 50 Blanton	(R) R R R 4	20- 4:21 42 Maxwell	(R) R R R R (R) R R 8
20- 6:13; 1:08-0:00 40 Dyer	R 1	20-12:50; 3:10-0:00 52 Walker	R 1
20- 4:32 34 Stevens	R R 2	20-11:26; 9:26-0:00 33 Delinger	
14:53- 9:16 20 Morgan	(R) 1	17:21-14:16 11 Howell	(R) 1
16:42- 8:21; 6:13- 0:00 32 Collier	R 1	10:07- 0:00 13 Lassiter	R R (R) 3
7:20- 5:02 4:32- 1:08 54 Winsett		4:21- 2:17; 0:19- 0:00 23 Addison	
		12:50- 3:10 51 Barnhart	R 1
		11:26- 9:26 43 Rakes	
TEAM REBOUNDS	R (R) R 3	TEAM REBOUNDS	R R 2
DEAD-BALL REBOUNDS	(R) 1	DEAD-BALL REBOUNDS	R (R) (R) 3
TOTAL REBOUNDS (INCLUDING DEAD-BALL REBOUNDS)		TOTAL REBOUNDS (INCLUDING DEAD-BALL REBOUNDS)	
22		25	

second number is the time the player is removed from the contest. The starters will be indicated by a beginning figure of the total minutes available in the quarter or half--in this case 20.

At the conclusion of the game, the totals are added for each player to determine actual playing time. The team total should equal five times the total number of minutes available in the game. For example, high school girls' basketball would total 140 (28×5), high school boys' basketball would total 160 (32×5), college men's and women's basketball would total 200 (40×5), and professional basketball would total 240 (48×5).

Statistician B would be responsible for all field goals made and attempted by both teams. This worker may wish to record free throws made and attempted as well to allow statistical balancing with Statistician A. Two methods exist for tabulating these totals. One, the use of a shot chart in which the location of all attempts may be documented, is discussed later in this chapter. The other procedure is presented in Figure 3.3.

As in the previous example, records are kept for both teams with each half recorded on a separate sheet of paper. Successful field goal attempts are represented by a "2", unsuccessful field goal attempts by a "1", successful free throw attempts by a "●", and unsuccessful free throw

Figure 3.3. FIELD GOAL AND FREE THROW SHEET

DATE: 2-14-79

State TEAM HALF: 1st Ridgecrest TEAM

NO. AND PLAYER	FIELD GOALS/FREE THROWS	NO. AND PLAYER	FIELD GOALS/FREE THROWS
12 Bond	1 1 1 2 0 1 1- 5 20%	15 Sample	1 2 2 1 1 0 1 2 3- 7 43%
24 Reager	1 1 2 2 1 2 1 3- 7 43%	21 Simerly	1 1 2 1 2 0 2- 5 40%
50 Blanton	2 1 2 0 1 2 3- 5 60%	42 Maxwell	2 2 2 2 1 1 4- 6 67%
40 Dyer	1 2 2 2 2 0 4- 5 80%	52 Walker	1 2 1 2 1 1 2- 6 33%
34 Stevens	2 0 1 1 1 1 2 1 2- 7 29%	33 Delinger	1 0- 1 0%
20 Morgan	1 0 1 1 0- 3 0%	11 Howell	0- 0 0%
32 Collier	2 1- 1 100%	13 Lassiter	1 2 2 1 0 2- 4 50%
54 Winsett	1 2 0 1 1- 3 33%	23 Addison	0 0 1 0- 1 0%
		51 Barnhart	1 0 2 1- 2 50%
		43 Rakes	2 1- 1 100%
TEAM TOTALS	15 FGM 5 FTM	36 FGA 10 FTA	41.7 FGM% 50.0 FTM%
TEAM TOTALS	15 FGM 9 FTM	33 FGA 12 FTA	45.4 FGM% 75.0 FTM%

attempts by a "0". Field goal summaries are given in the right-hand corner of each player's row, while team summaries appear at the bottom. An advantage this approach has over the shot chart is that shots are listed in sequence for every participant and consecutive successful or unsuccessful attempts may be recognized easily.

Statistician C would be responsible for any combination of the following areas: assists, steals, errors, and blocked shots. Whether these areas are recorded for the opponents is dependent upon the needs of the situation and the abilities of the recorder. Due to the interrelationship of these categories, the worker needs to remain alert and free of distractions to insure the highest degree of accuracy, especially if the individual is working singularly and transcribing for both teams.

Figure 3.4 illustrates a chart kept by Statistician C. Assists are represented by an "A", steals by an "S", and errors by an "E". Raised symbols appearing by the "E" indicate the type of error committed. Traveling is shown by a "t", a 3-second violation by a "3", a bad pass by a "p", a dribbling violation by a "d", a backcourt violation by a "bc", and an offensive foul by an "f". Categorical totals are placed at the end of each player's row and team totals are given at the bottom of the page.

Figure 3.4. ASSIST, STEAL, AND ERROR SHEET

DATE: 2-14-79

State Ridgecrest
 TEAM TEAM

HALF: 1st

NO. AND PLAYER	ASSISTS, STEALS, ERRORS	NO. AND PLAYER	ASSISTS, STEALS, ERRORS
12 Bond	EP A S E ^t A S A E ^d EP A S	15 Sample	A E ^d S S A EP E ^t
24 Reager	E ^f	21 Simerly	A S S A E ^f A EP
50 Blanton	A E ³ E ^t	42 Maxwell	S EP A
40 Dyer	S EP E ^d	52 Walker	A
34 Stevens	E ^t	33 Delinger	S
20 Morgan	A	11 Howell	A E ^d A
32 Collier	S E ^f	13 Lassiter	
54 Winsett		23 Addison	EP
		51 Barnhart	S
		43 Rakes	
TEAM TOTALS	6 ASSISTS	5 STEALS	11 ERRORS
TEAM TOTALS	9 ASSISTS	7 STEALS	8 ERRORS

All of the charts kept by Statisticians A, B, and C should be filed after each game for future reference. The information contained on these sheets should be transferred to the official scorebook as soon as possible.

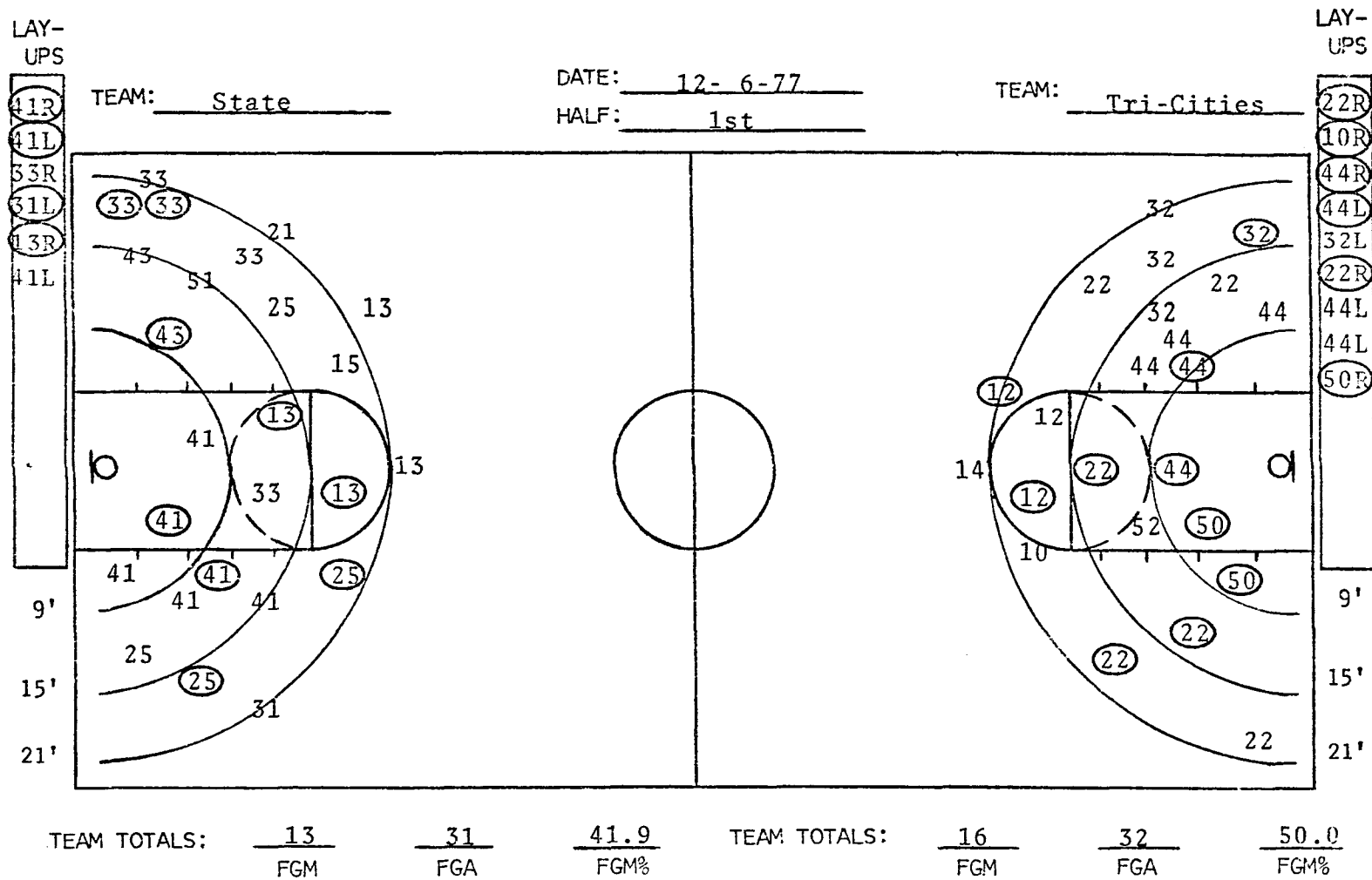
Shot Charts

One of the most important scouting and statistical aids in the game of basketball is the shot chart. Ranging in format from simple to complex, the chart provides information that cannot be obtained from other sources.

The basic shot chart is illustrated in Figure 3.5. Information to be recorded at the top of the sheet includes half identification, date and location of the game, and names of the competing teams. A complete diagram of a basketball court is shown on which the field goal attempts of both teams may be recorded for one half. The uniform number of the shooter is entered on the appropriate court location with all successful attempts circled. Below the chart is an area for noting team field goal percentage.

Two optional additions are shown here. Arcs are drawn at each end of the diagram to represent distance from the goal, and separate columns are provided to list layup attempts and other shots within five feet of the basket. Attempts from the left or right side of the goal are designated by an "L" or an "R" next to the player's uniform number.

Figure 3.5. SHOT CHART

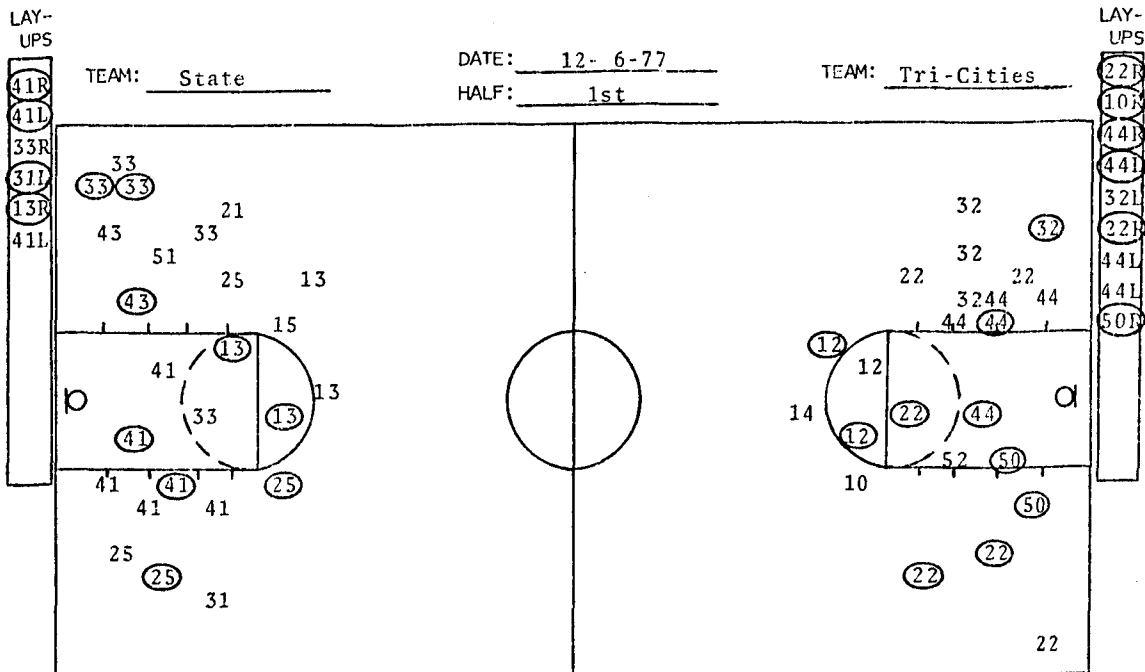


A chart of this nature requires the recorder to transfer the information gathered to other forms before the statistics can be thoroughly interpreted. The example seen in Figure 3.6 is more self-contained and provides more detail to the researcher. The field goal shooting performance of each player is documented below the shot chart with the starters for the half being listed first.

Although free throws are recorded in the official scorebook, the statistician may wish to include them on the shot chart to provide a complete scoring summary for each player. As seen in Figure 3.7, an area for free throws is provided below the shot chart and above the individual scoring section.

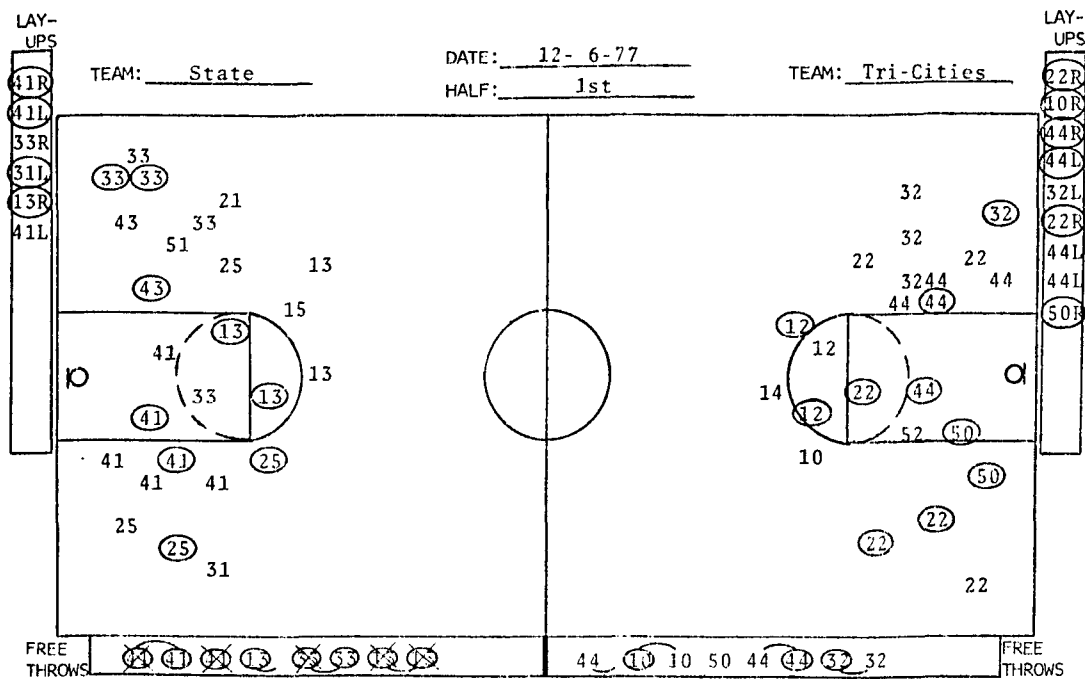
Two methods of recording free throws may be utilized. On the left side of the example, the player's uniform number appears inside the circle for the appropriate free throw situation. The circle is lightly crossed out to indicate successful attempts. The right side of the diagram shows only the player's uniform number being used to represent the free throw situation. The number is circled on successful free throw attempts. The former system is more consistent with the procedure utilized for the official scorebook, while the latter method is similar to that used in recording field goals on the shot chart and may decrease the possibility of a player's number being inadvertently crossed out.

Figure 3.6. SHOT CHART WITH PLAYER FIELD GOAL SUMMARIES



NO.	POS.	PLAYER	FGM	FGA	FGM%	NO.	POS.	PLAYER	FGM	FGA	FGM%
13	G*	Henderson	3	5	60.0	10	G*	Scott	1	2	50.0
15	G*	Murphy	0	1	0.0	12	G*	Bailey	2	3	66.7
41	C*	Cooper	4	9	44.4	50	C*	Armstrong	3	3	100.0
31	F*	Brinkley	1	2	50.0	44	F*	Franks	4	9	44.4
33	F*	Mobley	2	6	33.3	22	F*	Travis	5	8	62.5
51	C	Swingle	0	1	0.0	32	G	Tipton	1	5	20.0
21	G	DuBois	0	1	0.0	14	G	Rice	0	1	0.0
25	G	Wheeler	2	4	50.0	52	C	Galloway	0	1	0.0
43	F	Gilbert	1	2	50.0	40	F	Milton	0	0	0.0
						54	C	Armas	0	0	0.0
TEAM TOTALS			13	31	41.9	TEAM TOTALS			16	32	50.0

Figure 3.7. SHOT CHART WITH PLAYER SCORING SUMMARIES



NO.	POS.	PLAYER	FGM	FGA	FG%	FTM	FTA	FT%	PTS	NO.	POS.	PLAYER	FGM	FGA	FG%	FTM	FTA	FT%	PTS
13	G*	Henderson	3	5	60	2	3	67	8	10	G*	Scott	1	2	50	1	2	50	3
15	G*	Murphy	0	1	0	0	0	0	0	12	G*	Bailey	2	3	67	0	0	0	4
41	C*	Cooper	4	9	44	2	3	67	10	50	C*	Armstrong	3	3	100	0	1	0	6
31	F*	Brinkley	1	2	50	0	0	0	2	44	F*	Franks	4	9	44	0	0	0	8
33	F*	Mohley	2	6	33	1	2	50	5	22	F*	Travis	5	8	63	1	3	33	11
51	C	Swingle	0	1	0	0	0	0	0	32	G	Tipton	1	5	20	1	2	50	3
21	G	DuBois	0	1	0	0	0	0	0	14	G	Rice	0	1	0	0	0	0	0
25	G	Wheeler	2	4	50	0	0	0	4	52	C	Galloway	0	1	0	0	0	0	0
43	F	Gilbert	1	2	50	0	0	0	2	40	F	Milton	0	0	0	0	0	0	0
										54	C	Armas	0	0	0	0	0	0	0
TEAM TOTALS			13	31	42	5	8	63	31	TEAM TOTALS			16	32	50	3	8	38	35

The three examples shown thus far have dealt only with which player took the shot and the area on the court from where the shot was taken. A more advanced recording technique whereby the type of shot taken may be indicated is seen in Figure 3.8. Because of the symbols necessary for shot-type documentation, individual shot charts for each player are required. A separate column for layups is not needed, and arcs to represent distance from the basket are not included in this example.

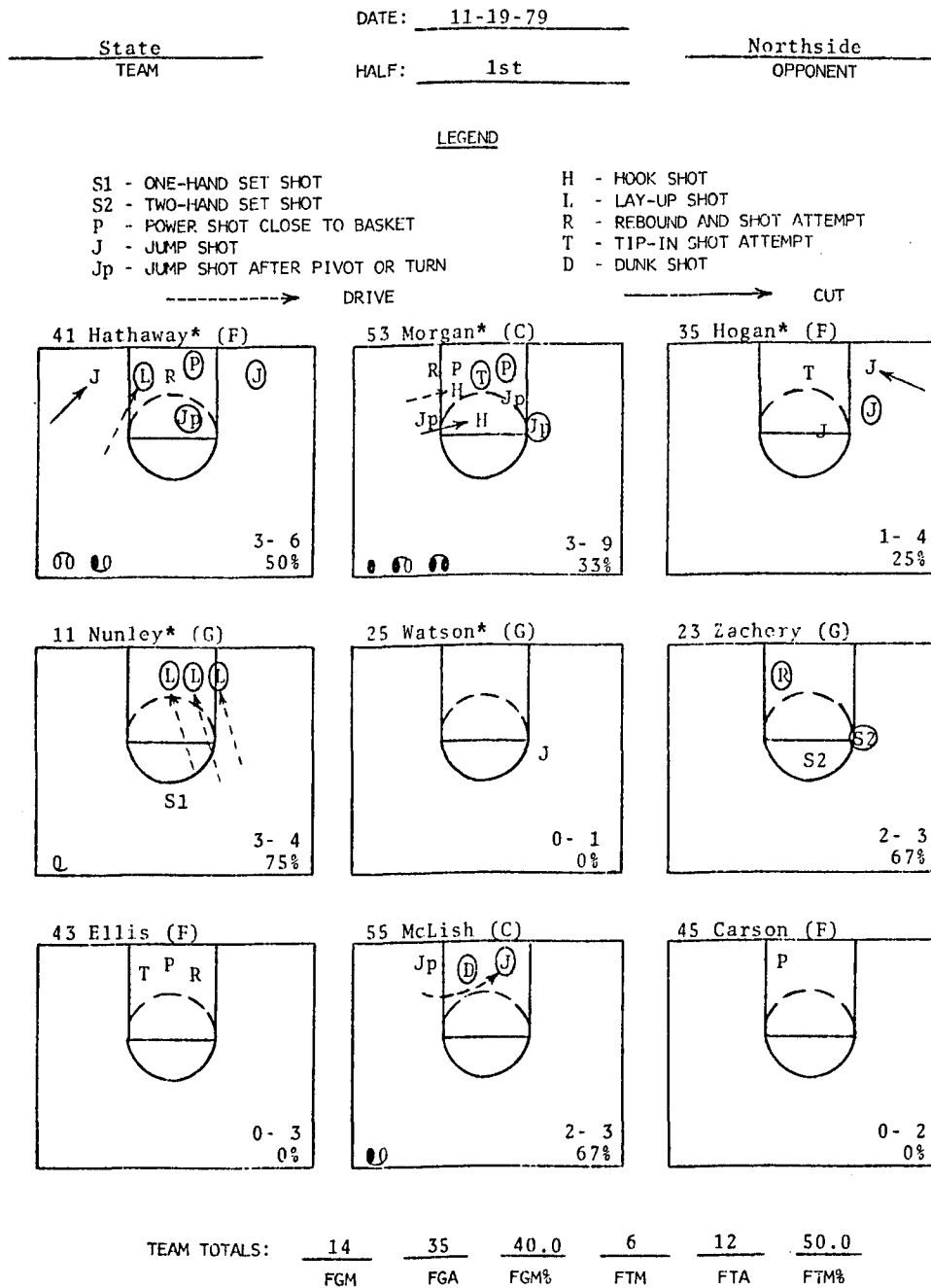
At the top of the sheet general information is provided concerning team names, date, and half, along with a legend explaining the symbols used. Nine individual shot charts are available with space provided over each for the player's name, number, and position. Starters are designated by an asterisk. In the lower left corner of each chart is an area to record free throws, while in the right corner field goal performance is summarized. Team totals are entered at the bottom of the sheet.

Two statisticians need to be enlisted if this format is to be used for each team. Too much time is lost if one worker has to scan two sheets of paper to find the appropriate player chart.

Efficiency Ratings

Offensive and defensive efficiency ratings are two of the most informative and comprehensive statistical

Figure 3.8. INDIVIDUAL SHOT CHARTS



concepts in the game of basketball. Developed by Paul Keller of Delaware, Ohio, the system requires that all possessions for both teams be documented for the entire game.

The offensive efficiency rating, or O. E. R., is determined by dividing the featured team's total points by their total number of possessions. The defensive efficiency rating, or D. E. R., is determined by dividing the opponent's total points by their total number of possessions. For example, an O. E. R. of 2.0 would indicate a team scored two points for every possession during the course of the game. A D. E. R. of 2.0 would indicate a team allowed two points per possession by its opponent over the entire contest. An O. E. R. of 1.0 or higher and a D. E. R. of 1.0 or lower are considered by the writer to be excellent standards.

Although Keller has devised in-depth procedures to chart and analyze efficiency ratings, a simple method of recording O. E. R. and D. E. R. is shown in Figure 3.9. Consecutive numbers from one to 25 are listed under each team to represent possessions during the half. The symbols used to describe the action on each possession are the same symbols used on the charts illustrated in Figures 3.2, 3.3, and 3.4. The uniform number of the player responsible for the action appears in parenthesis, and the running score for each squad appears in the respective right-hand column.

Figure 3.9. EFFICIENCY RATING CHART

DATE: 12-17-79
 HALF: 1st

TEAM: State TEAM: Ridgecrest

1 E ³ (50)	1 2(43) 2
2 0(24) R(33) 1	2 1(13) R(53) 2(53) 4
3 1(14) R(53)	3 1(23) R(T)
4 2(50) 3	4 E ^t (13)
5 E ^f (20)	5 E ^p (13)
Time-Out (15:20)	6 2(33) 6
6 2(24) 0(24) 6	41 for 43
7 1(20) R(20) 2(20) 8	7 1(41) R(14)
8 1(50) R(50) E ^t (50)	8 2(13) 8
30 for 20	9 2(41) 10
9 2(10) 10	Time-Out (11:40)
10 1(30) R(13)	10 E ^d (23)
12,40 for 10,50	11 2(33) 12
11 E ³ (40)	12 0(53) 14
12 1(12) R(24) 2(24) 12	43,11 for 41,13
Time-Out (9:06)	13 1(23) R(40)
13 2(14) 14	14 E ^p (53)
14 E ^p (24)	15 0(33) R(40) 15
15 1(12) R(40) 0(40) 16	16 1(23) R(30)
10,20,50 for 12,30,40	17 1(53) R(50)
16 2(12) 18	18 0(11) R(DB)
17 1(20) R(43)	19 E ^t (53)
18 2(14) 20	20 2(43) 17
19 2(24) 0(24) R(53) 22	21 2(53) 19
20 E ^f (10)	22
21 0(14) 23	23
22 1(24) R(DB)	24
23	25
24	
25	

OVERALL O. E. R. 1.05 OVERALL O. E. R. 0.90
 OVERALL D. E. R. 0.90 OVERALL D. E. R. 1.05

To enable an individual to analyze O. E. R. and D. E. R. in relation to time-outs and various player combinations, an area for recording substitutions, time-outs, offensive and defensive changes, and other information is provided in each team's left-hand margin.

In addition to the overall O. E. R. and D. E. R., the following information may be determined from this chart:

- (1) State's O. E. R. for the first 10 possessions (1.00);
- (2) State's D. E. R. for the first 10 possessions (1.00);
- (3) State's O. E. R. for the final 10 possessions (1.10);
- (4) State's D. E. R. for the final 10 possessions (0.70);
- (5) State's best O. E. R. player combination (12, 14, 24, 30, 40--1.33);
- (6) State's worst O. E. R. player combination (10, 14, 20, 24, 50--0.93);
- (7) State's best D. E. R. player combination (12, 14, 24, 30, 50--0.83);
- (8) State's worst D. E. R. player combination (10, 14, 24, 30, 50--1.00);
- (9) State's O. E. R. for the remainder of the half after its first time-out (1.17);
- (10) State's D. E. R. for the remainder of the half after its first time-out (0.94);
- and (11) the percentage of State's possessions in which an error was committed (27%).

Mr. Keller also has developed the offensive efficiency rating potential (O. E. R. P.) which is determined by dividing the total points scored by the total possessions in which an error was not committed. In the example shown in

Figure 3.9, State's O. E. R. P. is 1.44 as compared to an O. E. R. of 1.05. The smaller the difference between a team's O. E. R. and O. E. R. P., the more effective the team's performance is considered to be,

Abbreviated Halftime Box Score

A common form used to dispense basic halftime statistics to coaches and media personnel is the abbreviated halftime box score shown in Figure 3.10. Team totals are presented in eight of the most important statistical categories. Individual scoring, rebounding, and personal foul leaders are listed for each squad and a space for additional comments is provided at the bottom.

Play-by-Play Report

A scoring sequence report, or play-by-play report, is shown in Figure 3.11. This form is usually kept by an additional member of the home team's statistical crew and is provided mainly for the media to aid in the reporting of games. The official scorer may also find this chart useful when attempting to complete the running score section of the official scorebook.

The report gives the exact time when points were scored, the player who scored, and a description of the shot. Personal fouls are indicated in parenthesis. Time-outs, substitutions, and jump-ball situations have been

Figure 3.10. ABBREVIATED HALFTIME BOX SCORE

State		vs.	Ridgecrest	Feb. 14, 1979
				DATE
SITE: Ridgecrest Hall				10,456
				ATTENDANCE
	State		Ridgecrest	
TOTAL POINTS	31		35	
FIELD GOALS MADE	13		16	
FIELD GOALS ATTEMPTED	31		32	
FIELD GOAL %	41.9		50.0	
FREE THROWS MADE	5		3	
FREE THROWS ATTEMPTED	8		8	
FREE THROW %	62.5		37.5	
TOTAL REBOUNDS	20		19	
INDIVIDUAL SCORING LEADERS	Cooper	11	Hathaway	9
	Johnson	8	Angus	9
	Keefer	6	Delaney	5
INDIVIDUAL REBOUNDING LEADERS	Johnson	7	Hathaway	6
	Bradley	4	Delaney	5
			Ogilvie	3
INDIVIDUAL PERSONAL FOUL LEADERS	Keefer	2	Angus	3
	Compton	2	Ogilvie	2
	Bradley	2		
	Johnson	2		

GENERAL COMMENTS: Ridgecrest had an 11 point lead (33-22) with 1:30 left in the half. State's Cooper set the school's all-time scoring record with a free throw at 2:14 left in half.

Figure 3.11. PLAY-BY-PLAY REPORT

<u>TIME</u>	<u>STATE PLAY</u>	<u>SCORE</u>	<u>NORTHSIDE PLAY</u>
20:00	tip controlled		
19:35		0- 2	Odum layup
18:47	tip controlled		
18:18	Campbell, 22 ft. right	2- 2	
17:49	(Tyson -1)		
17:45		2- 4	Odum, 25 ft. left
17:32	Harding, 18 ft. right	4- 4	
17:15			(Fitzgerald -1)
17:03	Tyson, 20 ft. right	6- 4	
16:34	Oates, 2-2 FT	8- 4	(Hoover -1)
16:23		8- 6	Fitzgerald, 16 ft. right
16:07	(Oates -1)		
15:43	Oates, 3 ft. lane	10- 6	
15:16	Tyson, 16 ft. front	12- 6	
14:55	Oates layup	14- 6	
14:48	(Davis -1)		
14:39	(Tyson -2)		Green for Hoover
14:21	(Davis -2)		
13:34			TIME OUT
13:23	Harding layup	16- 6	
13:05		16- 8	Van Etta, 18 ft. left
12:50	Harding layup	18- 8	
12:40	(Davis -3)	18-10	Van Etta, 2-2 FT
	Dooley for Davis, Myers for Tyson		
11:51	Myers, 5 ft. front	20-10	
11:24		20-12	Fitzgerald, 12 ft. left
10:51	(Oates -2)	20-14	Bryant, 2-2 FT
10:14	Harding tip-in	22-14	
9:50	Dooley layup	24-14	
9:27		24-16	Fitzgerald, 20 ft. left
8:36	Harding layup	26-16	
8:13	TIME OUT		Odum for Bryant, Franklin for Van Etta
8:08	Dooley, 16 ft. left	28-16	
7:29		28-18	Green, 6 ft. left
7:20	Myers, 9 ft. left	30-18	
7:01	(Myers -1)	30-20	Franklin, 2-2 FT
6:09		30-22	Odum, 6 ft. front
5:09	Harding layup	32-22	
5:01	Harding, 0-1 FT		TECHNICAL FOUL (COACH)
4:25	(Oates -3)	32-24	Odum, 2-2 FT
4:17			tip controlled
4:04	Harding layup	34-24	
3:51		34-26	Bryant layup
3:35	Harding layup	36-26	
3:09	(Dooley -1)		Bryant, 0-1 FT
			Hoover for Green
3:02		36-28	Franklin, 2 ft. front
2:50	Harding layup	38-28	
2:28		38-30	Hoover, 3 ft. lane
2:13	Harding layup	40-30	(Hoover -2)
	Harding, 1-1 FT	41-30	
1:55	(Dooley -2)	41-32	Franklin, 2-2 FT
1:07	Myers, 6 ft. right	43-32	
:59	(Myers -2)	43-34	Fitzgerald, 2-2 FT
	Scott for Harding		
:41	Scott layup	45-34	
:15		45-36	Bryant, 18 ft. front

END OF FIRST HALF PLAY

included in this example. The running score is located between each team's action.

Post-Game Box Score

Due to its finality, the post-game box score needs to be more accurate and detailed than the abbreviated half-time box score. Once the game has ended and the members of the record-keeping crew have tabulated their specific statistical areas, all data should be transferred to a form similar to that shown in Figure 3.12. This process should be completed in an area free of distractions in order to expedite the task. Copies should be given to all statisticians, media personnel, coaches, and scouts in attendance.

For space-saving purposes, most newspapers will not print all of the information contained in one of these box scores. Rather, one of the following two methods is adopted for reporting game summaries.

The simplest method is shown in Figure 3.13. The final team score is followed by the total points tallied by each player. For those individuals who played but did not score, no number appears beside their name. The halftime score is given below the player totals.

The example shown in Figure 3.14 provides more information to the reader. Each player's scoring total is presented in its specific components. The first number

Figure 3.12. POST-GAME BOX SCORE

[illegible]

Figure 3.13. SIMPLE NEWSPAPER BOX SCORE

STATE (81): Calkins 15, Smith 5, Dooley 21, Tucker 3, Mason 10, Ely 6, Ames 12, Wilson, Gamble 1, Saxe 8, Freeze.

SOUTHWESTERN (75): Anderson 11, Gentry 4, Miller 17, Bamberger 19, Rowland 3, Siske 2, Bailey 2, Floyd, Bolinger 12, Woody 5.

HALFTIME SCORE: Southwestern 40, State 36

Figure 3.14. DETAILED NEWSPAPER BOX SCORE

STATE (81): Calkins 6 3-3 15; Smith 1 3-6 5; Dooley 9 3-4 21; Tucker 1 1-2 3; Mason 5 0-0 10; Ely 3 0-2 6; Ames 5 2-2 12; Wilson 0 0-0 0; Gamble 0 1-4 1; Saxe 4 0-0 8; Freeze 0 0-0 0. TOTALS: 34 13-23 81.

SOUTHWESTERN (75): Anderson 5 1-3 11; Gentry 2 0-0 4; Miller 8 1-1 17; Bamberger 8 3-5 19; Rowland 1 1-1 3; Siske 1 0-0 2; Bailey 0 2-4 2; Floyd 0 0-1 0; Bolinger 6 0-0 12; Woody 1 3-3 5. TOTALS: 32 11-18 75.

STATE	36	45	- 81
SOUTHWESTERN	40	35	- 75

FOULED OUT: Calkins, Saxe, Bamberger. TOTAL FOULS: State 21, Southwestern 26. TECHNICAL FOULS: Mason, Southwestern bench. REFEREES: Bill Newton and Randall Matthews. ATTENDANCE: 1,679.

after the name is the total field goals made. This number is followed by the free throws made, the free throws attempted, and the total points scored. Team score by quarters or halves is given next, followed by a section that lists those players disqualified due to fouls, total team fouls, technical fouls, names of referees, and game attendance.

Cumulative Statistics

A form used to record cumulative statistics is seen in Figure 3.15. The statistician should complete this chart after each successive game to provide current information on each player.

General information at the top of the sheet gives the team's overall and conference record, inclusive date of the data, and the ensuing game's date and opponent. Team and opponent totals are summarized at the bottom. This form also provides a handy method by which to regularly report statistical information to conference and national organizations.

Summary

Organization and accuracy will result if the statistician follows the suggestions presented in this chapter. The numbers recorded while a game is in progress will reflect what actually took place on the court.

Figure 3.15. CUMULATIVE STATISTICS SHEET

WON-LOST RECORD			INCLUDING GAMES OF <u>December 25, 1979</u> NEXT GAME VS. <u>Montrose Co.</u> ON <u>January 3, 1980</u>																		
CONFERENCE: <u>1-2</u>																					
OVERALL: <u>1-6</u>			FIELD GOALS			FREE THROWS			REBOUNDS				ASSISTS		STEALS		ERRORS		POINTS		
PLAYER	GAM	TIME	MADE	ATT	%	MADE	ATT	%	OFF	DEF	TOTAL	AVG	TOTAL	AVG	TOTAL	AVG	TOTAL	AVG	TOTAL	AVG	
Alexander	7	239:17	11	34	32.4	14	18	77.8	5	19	24	3.4	47	6.7	20	2.9	33	4.7	36	5.2	
Bernstein	7	240:32	38	111	34.2	11	24	45.8	23	48	71	10.1	8	1.1	8	1.1	13	1.9	87	12.4	
Evans	5	23:26	0	5	0.0	0	0	0.0	0	1	1	0.2	0	0.0	0	0.0	1	0.2	0	0.0	
Gregory	7	148:01	18	52	34.6	4	4	100.	6	12	18	2.6	7	1.0	2	0.3	8	1.1	40	5.7	
Jones	4	37:52	4	10	40.0	0	2	0.0	2	6	8	2.0	0	0.0	2	0.5	4	1.0	8	2.0	
Keele	4	8:05	0	0	0.0	0	1	0.0	2	0	2	0.5	1	0.3	0	0.0	0	0.0	0	0.0	
Kidd	7	200:56	24	88	27.3	6	24	25.0	17	26	43	6.1	10	1.4	10	1.4	20	2.9	54	7.7	
Knight	7	27:16	2	4	50.0	0	1	0.0	1	2	3	0.4	7	1.0	3	0.4	6	0.9	4	0.6	
Martin	7	221:02	32	76	42.1	8	14	57.1	14	15	29	4.1	12	1.7	8	1.1	15	2.1	72	10.3	
Simpson	7	64:09	6	22	27.3	3	5	60.0	2	5	7	1.0	1	0.1	0	0.0	13	1.9	15	2.1	
Walters	7	184:07	12	40	30.0	5	17	29.4	24	31	55	7.9	6	0.9	11	1.6	14	2.0	29	4.1	
Wright	4	5:17	0	1	0.0	0	0	0.0	0	0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	
TEAM									26	20	46	6.7					2	0.3			
TEAM TOTALS	7	1400:	147	443	33.2	51	110	46.4	122	185	307	43.9	99	14.1	64	9.3	130	18.6	345	49.3	
OPPONENT TOTALS	7	1400:	189	513	36.8	61	112	54.5	177	213	390	55.7	107	15.3	63	9.0	112	16.0	441	63.0	
REBOUNDING PERCENTAGE												44.0	SCORING MARGIN								-13.7

Chapter 4

INDIVIDUAL STATISTICS

There exists a wide variety of charts that may be utilized when examining the performances of individual players. The suggestions given in this chapter should be sufficient in scope to meet the needs of any statistician.

Cumulative Season Records

The most common form of all statistical summaries is the listing of individual cumulative records for the completed season. All of the running statistics which are kept during the year should be included on the same chart and not divided on two or three different forms. Time and effort will be saved by having the information recorded in one place.

As the example in Table 4.1 shows, 23 different areas of statistics are listed for each player. This information gives a complete appraisal of the individual's season performance. Team totals are compared with opponent totals below the individual listings. Including a line between every three players and including a legend that explains the statistical abbreviations will enable the researcher to locate and interpret the information more rapidly.

Table 4.1. CUMULATIVE SEASON RECORDS

PLAYER	TIME	GAM	GWB	FGM	FGA	FGM%	FTM	FTA	FTM%	--- REBOUNDS ---			AST	AVG.		AVG.		AVG.		FOU	DIS	PTS	AVG. PTS.
										OFF	DEF	TOT		AST.	STE	STE.	ERR	ERR.	ERR.				
Bernstein, Ed	767:16	24	1	106	286	37.1	39	88	44.3	85	156	241	10.04	16	0.67	28	1.17	50	2.08	61	3	251	10.46
Martin, Larry	652:23	24	0	78	205	38.0	11	19	57.9	31	62	93	3.88	48	2.00	27	1.13	49	2.04	25	0	167	6.96
Walters, Tommy	591:02	24	3	61	163	37.4	26	61	42.6	76	109	185	7.71	17	0.71	35	1.46	47	1.96	62	4	148	6.17
Kidd, Victor	542:31	23	0	58	208	27.9	17	46	37.0	40	56	96	4.17	27	1.17	31	1.35	54	2.35	88	8	133	5.78
Stone, Sammy	343:14	13	2	30	100	30.0	14	23	60.9	13	29	42	3.23	40	3.08	18	1.38	25	1.92	13	0	74	5.69
Jones, Junior	349:30	21	0	49	138	35.5	11	21	52.4	37	71	108	5.14	5	0.24	15	0.71	28	1.33	46	2	109	5.19
Alexander, Roy	663:40	24	1	50	144	34.7	24	37	64.9	19	48	67	2.79	127	5.29	52	2.17	82	3.42	67	2	124	5.17
Gregory, Scott	465:21	24	1	48	156	30.8	4	4	100.0	26	31	57	2.38	20	0.83	10	0.42	20	0.83	18	0	100	4.17
Simpson, Guy	206:44	22	0	25	76	32.9	4	7	57.1	6	12	18	0.82	9	0.41	6	0.27	32	1.45	21	0	54	2.45
Knight, Jeff	90:15	16	0	4	14	28.6	0	2	0.0	2	3	5	0.31	20	1.25	5	0.31	19	1.19	3	0	8	0.50
Wright, Pat	40:09	11	0	1	4	25.0	0	2	0.0	4	5	9	0.82	2	0.18	2	0.18	4	0.36	3	0	2	0.18
Evans, Randy	79:50	14	0	0	23	0.0	0	0	0.0	1	4	5	0.36	4	0.29	0	0.00	9	0.64	4	0	0	0.00
Keele, Brad	8:05	4	0	0	0	0.0	0	1	0.0	2	0	2	0.50	1	0.25	0	0.00	0	0.00	1	0	0	0.00
team										41	62	103	4.35					9	0.38				
TEAM TOTALS	4800:00	24	8	510	1517	33.6	150	311	48.2	383	648	1031	42.96	336	14.00	229	9.54	428	17.83	412	19	1170	48.75
OPPONENT TOTALS	4800:00	24	16	604	1582	38.2	223	394	56.6	447	733	1180	49.17	287	11.96	242	10.08	422	17.58	371	12	1433	59.71

DEAD-BALL REBOUNDS: State 52, Opponents 54

LEGEND: TIME- TIME PLAYED; GAM- GAMES PLAYED; GWB- GAME WINNING BASKETS; FGM- FIELD GOALS MADE; FGA- FIELD GOALS ATTEMPTED; FGM%- FIELD GOAL PERCENTAGE; FTM- FREE THROWS MADE; FTA- FREE THROWS ATTEMPTED; FTM%- FREE THROW PERCENTAGE; OFF- OFFENSIVE REBOUNDS; DEF- DEFENSIVE REBOUNDS; TOT- TOTAL REBOUNDS; AVG.- REBOUND AVERAGE PER GAME; AST- ASSISTS; STE-STEALS; ERR- ERRORS; FOU- PERSONAL FOULS; DIS- DISQUALIFICATIONS DUE TO FOULS; PTS- POINTS SCORED.

TEAM LEADERS: TIME- Bernstein (767:16); GAM- Bernstein, Martin, Walters, Alexander, Gregory (24); GWB- Walters (3); FGM- Bernstein (106); FGA- Bernstein (286); FGM%- Martin (38.0); FTM- Bernstein (39); FTA- Bernstein (88); FTM%- Gregory (100.0); OFF- Bernstein (85); DEF- Bernstein (156); TOT- Bernstein (241); AVG. REB- Bernstein (10.04); AST- Alexander (127); AVG. AST- Alexander (5.29); STE- Alexander (52); AVG. STE- Alexander (2.17); ERR- Alexander (82); AVG. ERR- Alexander (3.42); FOU- Kidd (88); DIS- Kidd (8); PTS- Bernstein (251); AVG. PTS- Bernstein (10.46).

CAREER STATISTICS

PLAYER	GAM	GWB	FGM	FGA	FGM%	FTM	FTA	FTM%	---REBOUNDS---			AST	AVG.		AVG.		AVG.		FOU	DIS	PTS	AVG. PTS.
									OFF	DEF	TOT		AST.	STE	STE.	ERR	ERR.	ERR.				
Stone, Sammy	83	8	475	1235	38.5	153	254	60.2	134	363	497	5.99	236	2.84	212	2.55	240	2.89	149	4	1103	13.29
Walters, Tommy	47	6	165	411	40.1	103	215	47.9	158	224	382	8.13	39	0.83	68	1.45	106	2.26	131	9	433	9.21
Martin, Larry	47	1	159	444	35.8	68	90	75.6	89	128	217	4.62	78	1.66	56	1.19	92	1.96	44	0	386	8.21
Gregory, Scott	69	3	167	572	29.2	11	25	44.0	87	109	196	2.84	67	0.97	53	0.77	80	1.16	63	0	345	5.00
Evans, Randy	34	1	16	75	21.3	4	8	50.0	11	25	36	1.06	9	0.26	6	0.18	26	0.76	21	0	36	1.06
Knight, Jeff	35	0	6	33	18.2	3	8	37.5	6	9	15	0.43	23	0.66	16	0.46	33	0.94	7	0	15	0.43

Listing the team leaders below the legend is optional. The alternative would be to circle the superior figures in the statistical listings at the top of the sheet. Each method has its advantages. The former appears neater and has less chance of being misread, while the latter aids in specific category location.

A section giving the career statistics of those players having played more than one season is included at the bottom of the sheet. This facilitates the comparison of seasonal and career records to determine where improvement or regression occurred.

Percentage Breakdown of Statistics

Relating closely to the previous section is a new concept in basketball data dealing with the percentage breakdown of individual records. Once the cumulative statistics are finalized, it is relatively simple to determine the percentage of the team total each player was responsible for within the specific category.

The player's total is divided by the team total and the result is recorded in the appropriate column on the percentage chart. When the chart is complete, each vertical column should equal 100% with the exception of the time-played and games-played categories. Because there are five players on the court at the same time, the time-played column should

total 500%. And because there is no limit on the number of players that may participate in a single game, the total percentage under the column of games-played is meaningless.

Table 4.2 shows the percentage breakdown for the individual statistics listed in Table 4.1. A legend is recommended to insure all abbreviations are understood. As in the previous example, team leaders may be listed separately below the legend or may be designated by circling the appropriate numbers in the chart.

Interesting observations may be made by using this format. For example, Martin and Alexander combined for over one-half of the team's assists during the season, Bernstein saw action nearly 80% of the possible playing time during the year, and the areas of field goal attempts and errors were the most evenly balanced categories as no single player accounted for as much as one-fifth of the team total.

When an individual's percentage is higher under field goals made than it is under field goals attempted, it indicates that player's individual field goal shooting percentage is higher than the team's overall field goal shooting percentage. Conversely, if the individual's percentage is lower under field goals made than it is under field goals attempted, it indicates the player's individual field goal shooting percentage is lower than the team's overall field goal shooting percentage. For example, from the information given in

Table 4.2. PERCENTAGE BREAKDOWN OF STATISTICS

PLAYER	--REBOUNDS--															
	%TIME	%GAM	%GWB	%FGM	%FGA	%FTM	%FTA	%OFF	%DEF	%TOT	%AST	%STE	%ERR	%FOU	%DIS	%PTS
Bernstein, Ed	79.9	100.0	12.5	20.8	18.9	26.0	28.3	22.2	24.1	23.4	4.8	12.2	11.7	14.8	15.8	21.5
Martin, Larry	68.0	100.0	0.0	15.3	13.5	7.3	6.1	8.1	9.6	9.0	14.3	11.8	11.4	6.1	0.0	14.3
Walters, Tommy	61.6	100.0	37.5	12.0	10.7	17.3	19.6	19.8	16.8	17.9	5.1	15.3	11.0	15.0	21.1	12.6
Kidd, Victor	56.5	95.8	0.0	11.4	13.7	11.3	14.8	10.4	8.6	9.3	8.0	13.5	12.6	21.4	42.1	11.4
Stone, Sammy	35.8	54.1	25.0	5.9	6.6	9.3	7.4	3.4	4.5	4.1	11.9	7.9	5.8	3.2	0.0	6.3
Jones, Junior	36.4	87.5	0.0	9.6	9.1	7.3	6.8	9.7	11.0	10.5	1.5	6.5	6.5	11.2	10.5	9.3
Alexander, Roy	69.1	100.0	12.5	9.8	9.5	16.0	11.9	5.0	7.4	6.5	37.8	22.7	19.2	16.3	10.5	10.6
Gregory, Scott	48.5	100.0	12.5	9.4	10.3	2.7	1.3	6.8	4.8	5.5	5.9	4.4	4.7	4.4	0.0	8.5
Simpson, Guy	21.5	91.7	0.0	4.9	5.0	2.7	2.3	1.6	1.9	1.7	2.7	2.6	7.5	5.1	0.0	4.6
Knight, Jeff	9.4	66.7	0.0	0.8	0.9	0.0	0.6	0.5	0.5	0.5	5.9	2.2	4.4	0.7	0.0	0.7
Wright, Pat	4.2	45.8	0.0	0.2	0.3	0.0	0.6	1.0	0.8	0.9	0.6	0.9	0.9	0.7	0.0	0.2
Evans, Randy	8.3	58.3	0.0	0.0	1.5	0.0	0.0	0.3	0.6	0.5	1.2	0.0	2.1	1.0	0.0	0.0
Keele, Brad	0.8	16.7	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0
team								10.7	9.6	10.0			2.1			
TOTALS	500%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

LEGEND: %TIME- PERCENTAGE OF TIME PLAYED; %GAM- PERCENTAGE OF GAMES PLAYED; %GWB- PERCENTAGE OF GAME WINNING BASKETS; %FGM- PERCENTAGE OF FIELD GOALS MADE; %FGA- PERCENTAGE OF FIELD GOALS ATTEMPTED; %FTM- PERCENTAGE OF FREE THROWS MADE; %FTA- PERCENTAGE OF FREE THROWS ATTEMPTED; %OFF- PERCENTAGE OF OFFENSIVE REBOUNDS; %DEF- PERCENTAGE OF DEFENSIVE REBOUNDS; %TOT- PERCENTAGE OF TOTAL REBOUNDS; %AST- PERCENTAGE OF ASSISTS; %STE- PERCENTAGE OF STEALS; %ERR- PERCENTAGE OF ERRORS; %FOU- PERCENTAGE OF PERSONAL FOULS; %DIS- PERCENTAGE OF DISQUALIFICATIONS; %PTS- PERCENTAGE OF POINTS SCORED.

TEAM LEADERS: %TIME- Bernstein (79.9); %GAM- Bernstein, Martin, Walters, Alexander, Gregory (100.0); %GWB- Walters (37.5); %FGM- Bernstein (20.8); %FGA- Bernstein (18.9); %FTM- Bernstein (26.0); %FTA- Bernstein (28.3); %OFF REB- Bernstein (22.2); %DEF REB- Bernstein (24.1); %TOT REB- Bernstein (23.4); %AST- Alexander (37.8); %STE- Alexander (22.7); %ERR- Alexander (19.2); %FOU- Kidd (21.4); %DIS- Kidd (42.1); %PTS- Bernstein (21.5).

Table 4.2, it can be noted that Bernstein's percentage under field goals made (20.8) is higher than the percentage under field goals attempted (18.9). This should indicate that Bernstein's individual field goal shooting percentage is higher than the team's overall field goal shooting percentage. By referring to Table 4.1, this assumption is confirmed. Bernstein's field goal percentage is 37.1, while the team's field goal percentage is 33.6.

Conversely, Simpson was responsible for 4.9% of the team's field goals made and 5.0% of the team's field goals attempted. Because the percentage in the former category is lower than the percentage in the latter category, Simpson's individual field goal percentage should be lower than the team's overall field goal percentage. A reference to Table 4-1 shows this to be true--32.9 for Simpson as compared to 33.6 for the team. This concept holds true for the free throw categories as well.

Statistics-Per-Minute

An important concept to remember when dealing with basketball statistics is that a player will be credited with a game-played whether that individual performed for 30 minutes or 30 seconds. Because per-game average is the basis for a majority of the sport's records, the data for those individuals who play only sparingly in each contest may be distorted.

A method of bringing individual statistics into better perspective and determining the players that are most effective based upon the actual amount of playing time is presented in Table 4.3. Each player's total in the various statistical categories has been divided by the individual's total playing time. The result is a decimal number which may be used to compare individuals as to their output-per-minute of actual participation time.

In many instances, the team leader in the cumulative season statistics is not the same individual who leads the squad in per-minute production. In Table 4.3, the leaders in field goals made, field goals attempted, offensive rebounds, assists, errors, and free throws attempted are different from the leaders in Table 4.1.

Another distinctive feature of this chart is that it enables the statistician to project the performance of a player over the course of a full game. Multiplying each category by the total number of minutes in a game would yield this result. For example, to determine Bernstein's point expectation for a complete college game of 40 minutes, multiply .327 by 40. The result is 13.08.

As is the case in regular statistical balancing, two times the field goal made column plus the free throw made column will equal the total point column. Adding the offensive and defensive rebound columns will equal the total rebound

Table 4.3. STATISTICS PER MINUTE

<u>PLAYER</u>	<u>--REBOUNDS--</u>											
	<u>FGM</u>	<u>FGA</u>	<u>FTM</u>	<u>FTA</u>	<u>OFF</u>	<u>DEF</u>	<u>TOT</u>	<u>AST</u>	<u>STE</u>	<u>ERR</u>	<u>FOU</u>	<u>PTS</u>
Bernstein, Ed	.138	.373	.051	.115	.111	.203	.314	.021	.036	.065	.080	.327
Martin, Larry	.120	.314	.017	.029	.048	.095	.143	.074	.041	.075	.038	.256
Walters, Tommy	.103	.276	.044	.103	.129	.184	.313	.029	.059	.080	.105	.250
Kidd, Victor	.107	.383	.031	.085	.074	.103	.177	.050	.057	.100	.162	.245
Stone, Sammy	.087	.291	.041	.067	.038	.084	.122	.117	.052	.073	.038	.216
Jones, Junior	.140	.395	.031	.060	.106	.203	.309	.014	.043	.080	.132	.312
Alexander, Roy	.075	.217	.036	.056	.029	.072	.101	.191	.078	.124	.101	.187
Gregory, Scott	.103	.335	.009	.009	.056	.067	.122	.043	.021	.043	.039	.215
Simpson, Guy	.121	.368	.019	.034	.029	.058	.087	.044	.029	.155	.102	.261
Knight, Jeff	.044	.155	.000	.022	.022	.033	.055	.222	.055	.211	.033	.089
Wright, Pat	.025	.100	.000	.050	.100	.125	.224	.050	.050	.100	.075	.050
Evans, Randy	.000	.288	.000	.000	.013	.050	.063	.050	.000	.113	.050	.000
Keele, Brad	.000	.000	.000	.124	.248	.000	.248	.124	.000	.000	.124	.000

TEAM LEADERS: FGM- Jones (.140); FGA- Jones (.395); FTM- Bernstein (.051); FTA- Keele (.124);
OFF REB- Keele (.248); DEF REB- Bernstein (.203); TOT REB- Bernstein (.314); AST- Knight
(.212); STE- Alexander (.078); ERR- Knight (.211); FOU- Kidd (.162); PTS- Bernstein (.327).

column. However, vertically adding the individual totals in each column will not equal the team total because of the varying amount of playing time by each competitor. Much more involved calculation would be needed before the chart could be balanced in this manner, and it would be unnecessary for the purpose of this manual.

There may be a need for a special table for those who desire a clearer picture of the information provided by this chart. Table 4.4 shows a method by which players are ranked in descending order of effectiveness for certain statistical categories.

The numbers in the charts shown in Tables 4.3 and 4.4 may be evaluated on the basis of absolute values. However, the main purpose behind their development is to facilitate comparison between players.

Team Leaders

Another area of interest to the player, coach, media worker, or fan is individual statistical leaders per-game throughout the season. When this information is compiled for use in pre-season fact sheets, it is frequently listed after the score of the game and rarely consists of more than the scoring and rebounding leader. A chart devoted entirely to this type of information serves a valuable purpose and may be devised to suit the needs of any statistician.

Table 4.4. PER MINUTE RANKINGS

<u>FIELD GOALS MADE</u>		<u>TOTAL REBOUNDS</u>	
1. Jones	.140	1. Bernstein	.314
2. Bernstein	.138	2. Walters	.313
3. Simpson	.121	3. Jones	.309
4. Martin	.120	4. Keele	.248
5. Kidd	.107	5. Wright	.224
6. Walters	.1032	6. Kidd	.177
7. Gregory	.1031	7. Martin	.143
8. Stone	.087	8. Gregory	.1224
9. Alexander	.075	9. Stone	.1223
10. Knight	.044	10. Alexander	.101
11. Wright	.025	11. Simpson	.087
12. Evans	.000	12. Evans	.063
13. Kindberg	.000	13. Knight	.055

<u>ASSISTS</u>		<u>TOTAL POINTS</u>	
1. Knight	.222	1. Bernstein	.327
2. Alexander	.191	2. Jones	.312
3. Keele	.124	3. Simpson	.261
4. Stone	.117	4. Martin	.256
5. Martin	.074	5. Walters	.250
6. Evans	.0501	6. Kidd	.245
7. Wright	.0498	7. Stone	.216
8. Kidd	.0497	8. Gregory	.215
9. Simpson	.044	9. Alexander	.187
10. Gregory	.043	10. Knight	.089
11. Walters	.029	11. Wright	.050
12. Bernstein	.021	12. Evans	.000
13. Jones	.014	13. Keele	.000

In the example given in Table 4.5, five statistical categories are listed. The date of the game and the opponent are listed in the left-hand column along with an asterisk if the featured team was victorious. Team leaders and their totals in each area follow, with all home games being indicated by italics.

The following supplemental data may be obtained from a chart of this nature: most home games as leading rebounder (8 by Bernstein); fewest steals made by the team leader in an away game (1 by Kidd and Alexander at Cedarville on 2-16); and most categories led by the same player in one game (4 by Alexander vs. Montrose County on 1-12). The researcher will also note that eight different players for at least one game, and six different players for at least two games, either led or shared the team lead in scoring. Eight different players led in errors, seven different players led in steals and assists, and six different players led in rebounds. In 10 games the scoring leader was also the rebounding leader, but in only one game was the rebounding leader the same player as the assist leader. In six games, the leader in assists, steals, and errors was the same individual, and the team's leading scorer for the season (Bernstein) was high scorer in only 10 of the 24 games that were played.

The same format may be utilized when presenting seasonal leaders in various categories and is illustrated in

Table 4.5. GAME-BY-GAME TEAM LEADERS

DATE AND OPPONENT	TOTAL POINTS	REBOUNDS	ASSISTS	STEALS	ERRORS
11-27-79 * Bismark	Martin 14	Bernstein 14	Alexander 4	Kidd Jones 2	Alexander 6
11-30-79 Seaside South	Kidd 20	Walters 7	Alexander Gregory 3	Alexander 4	Alexander 7
12- 1-79 Tusculum	Martin Alexander 11	Bernstein 14	Alexander 7	Alexander 6	Kidd 6
12- 5-79 Maplewood	Martin 16	Walters 13	Alexander 9	Bernstein 4	Alexander 5
12- 7-79 Wesleyan	Bernstein 14	Bernstein 7	Alexander 9	Alexander 4	Alexander 5
12- 8-79 Cedarville	Bernstein 12	Walters Bernstein 8	Alexander 6	Walters 4	Kidd Simpson 3
12-14-79 Maryville	Bernstein 19	Bernstein 12	Alexander 9	Alexander 3	Bernstein 6
1-12-80 * Montrose Co.	Alexander 16	Kidd 13	Alexander 12	Martin Alexander 1	Alexander 4
1-14-80 * Bismark	Jones 13	Martin Bernstein 10	Knight Alexander 5	Alexander 5	Alexander 5
1-17-80 Wesleyan	Simpson 8	Walters 9	Alexander 3	Alexander 2	Alexander 7
1-19-80 * Tusculum	Martin 12	Bernstein 14	Alexander 6	Martin Walters 3	Alexander 6
1-25-80 Southwestern	Bernstein 14	Bernstein 13	Martin 6	Stone 3	Gregory Martin 2
1-26-80 Corning Acad.	Bernstein 12	Walters 18	Kidd 3	Stone 4	Kidd 6
1-28-80 Longwood	Kidd 8	Bernstein 10	Knight Alexander 4	Martin Walters 2	Alexander 6
2- 1-80 Maryville	Bernstein 11	Bernstein 11	Alexander 5	Walters 5	Alexander 3
2- 2-80 * Montrose Co.	Jones 16	Jones 15	Alexander 9	Martin 3	Walters 3
2- 5-80 Longwood	Bernstein 13	Bernstein 8	Alexander 7	Kidd 3	Martin 4
2-12-80 Corning Acad.	Bernstein 12	Bernstein 14	Evans Gregory 3	Alexander 5	Walters 8
2-15-80 * Southwestern	Bernstein 14	Jones Walters 8	Alexander 5	Stone 2	Walters 3
2-16-80 Cedarville	Bernstein 8	Alexander 7	Alexander 5	Kidd Alexander 1	Bernstein 6
2-18-80 * Maplewood	Walters 15	Walters 13	Stone 5	Stone 4	Stone 5
2-19-80 * Tusculum	Gregory Walters 14	Bernstein 10	Stone 7	Bernstein 4	Bernstein Alexander 4
2-22-80 Corning Acad.	Walters 17	Walters 14	Stone 5	Kidd Alexander 4	Kidd Stone 4
2-23-80 Tusculum	Walters 10	Bernstein 12	Alexander 4	Alexander 3	Martin 4

Table 4.6. The only alteration from the previous example is that entire seasons have replaced specific games in the left-hand column. The number appearing next to the player's name indicates the academic classification of the player. For example, a "1" would indicate a freshman, "2" a sophomore, "3" a junior, and "4" a senior.

Individual High-Game Performances

Two methods exist by which to record top-game performances of an individual in various categories over the course of a season. The most involved, yet most thorough and meaningful way, requires that a chart be developed for each player and the records listed in a game-by-game sequential order. An example of this method is seen in Table 4.7.

The date of the game and the opponent are written in the left-hand column with all home games being italicized. An asterisk appears in this column if the game was won by the player's team, and an "S" is included if the individual was a starter for that game. The high-game performance for each category is circled, and the player's cumulative season totals and averages appear at the bottom of the chart.

In addition to the overall high-game performances, top efforts in a home game, road game, winning cause, losing cause, starting role, reserve role, and against certain opponents may be isolated. Certain stages of the season in

Table 4.6. SEASON-BY-SEASON TEAM LEADERS

<u>SEASON</u>	<u>FIELD GOAL PERCENTAGE</u>		<u>FREE THROW PERCENTAGE</u>		<u>REBOUNDING AVERAGE</u>		<u>TOTAL POINT AVERAGE</u>	
1968-69	Janet Bryson ²	37.4	Diane Reston ⁴	63.0	Laura Webb ²	12.2	Janet Bryson ²	13.1
1969-70	Janet Bryson ³	38.2	Linda Patton ¹	65.7	Janet Bryson ³	13.8	Janet Bryson ³	15.6
1970-71	Jill Groos ²	41.3	Mary Bell ²	73.8	Laura Webb ⁴	9.4	Janet Bryson ⁴	16.8
1971-72	Sarah Hill ¹	40.7	Sandy Cummings ³	72.4	LuAnne Jacobs ¹	10.8	Sandy Cummings ³	17.4
1972-73	Jill Groos ⁴	38.6	Linda Patton ⁴	75.0	Deb Gregory ¹	11.3	Deb Gregory ¹	14.2
1973-74	Deb Gregory ²	42.1	Edith Daggy ³	82.9	Deb Gregory ²	10.6	Deb Gregory ²	11.4
1974-75	Brenda Whitson ²	39.4	Edith Daggy ⁴	71.4	Deb Gregory ³	13.3	Jo Newman ¹	19.7
1975-76	Brenda Whitson ³	36.9	Jan Dunbar ²	73.7	Robin Garrett ⁴	14.4	Brenda Whitson ³	17.3
1976-77	Brenda Whitson ⁴	39.3	Pam Gardner ²	80.3	Terry Arnette ³	12.7	Terry Arnette ³	16.4
1977-78	Andrea Talley ³	41.8	Jan Dunbar ⁴	70.8	Trish O'Neal ⁴	13.0	Terry Arnette ⁴	13.0
1978-79	Carol Durkin ¹	41.5	Pam Gardner ⁴	76.4	Carol Durkin ¹	10.2	Carol Durkin ¹	15.0
1979-80	Elaine Ray ⁴	42.2	Holly Stallings ²	72.6	Carol Durkin ²	11.9	Carol Durkin ²	16.3

Table 4.7. INDIVIDUAL HIGH-GAME PERFORMANCES

TOMMY WALTERS 1979-80

OPPONENT/DATE		TIME	FGM	FGA	FGM%	FTM	FTA	FTM%	---REBOUNDS---			AST	STE	ERR	FOU	PTS
									OFF	DEF	TOT					
11-27-79 Bismark	* S	18:34	3	5	60.0	0	2	0.0	5	3	8	1	1	3	(5)	6
11-30-79 Seaside South	S	28:11	1	1	(100.0)	0	0	0.0	3	4	7	(2)	0	1	0	2
12- 1-79 Tusculum	S	30:57	2	7	28.6	0	0	0.0	4	5	9	1	1	3	(5)	4
12- 5-79 Maplewood	S	22:46	1	6	16.7	3	8	37.5	5	8	13	1	3	0	(5)	5
12- 7-79 Wesleyan	S	31:48	4	9	44.4	0	3	0.0	2	4	6	0	2	2	1	8
12- 8-79 Cedarville	S	33:21	1	7	14.3	1	2	50.0	3	5	8	1	4	3	2	3
12-14-79 Maryville		20:30	0	5	0.0	1	2	50.0	2	2	4	0	0	2	1	1
1-12-80 Montrose County	*	16:12	0	2	0.0	3	4	75.0	0	2	2	0	0	1	2	3
1-14-80 Bismark	*	19:23	2	8	25.0	0	0	0.0	5	4	9	1	2	2	3	4
1-17-80 Wesleyan		17:30	0	2	0.0	1	5	20.0	3	6	9	(2)	1	1	1	1
1-19-80 Tusculum	* S	21:55	1	5	20.0	0	4	0.0	4	6	10	0	3	1	4	2
1-25-80 Southwestern		16:20	1	3	33.3	3	4	75.0	3	1	4	1	0	1	1	5
1-26-80 Corning Academy	S	34:22	5	(17)	29.4	1	3	33.3	(9)	9	(18)	0	2	0	2	11
1-28-80 Longwood	S	19:40	1	6	16.7	0	0	0.0	3	5	8	0	2	1	1	2
2- 1-80 Maryville	S	23:31	2	4	50.0	1	2	50.0	1	4	5	0	(5)	1	3	5
2- 2-80 Montrose County	* S	15:27	1	2	50.0	0	0	0.0	2	2	4	0	1	3	3	2
2- 5-80 Longwood		12:23	2	3	66.7	0	0	0.0	0	4	4	0	0	2	0	4
2-12-80 Corning Academy	S	31:46	5	7	71.4	0	2	0.0	2	2	4	1	1	(8)	3	10
2-15-80 Southwestern	* S	26:16	5	14	35.7	0	0	0.0	3	5	8	0	1	3	3	10
2-16-80 Cedarville	S	18:45	2	3	66.7	0	0	0.0	1	2	3	0	0	1	(5)	4
2-18-80 Maplewood	* S	32:22	5	11	45.5	(5)	6	(23.3)	3	(10)	13	1	3	3	4	15
2-19-80 Tusculum	* S	(36:38)	(7)	14	50.0	0	0	0.0	4	4	8	(2)	1	1	1	14
2-22-80 Corning Academy	S	32:37	6	15	40.0	(5)	(9)	55.6	5	9	14	1	1	3	3	(17)
2-23-80 Tusculum	S	31:48	4	7	57.1	2	5	40.0	4	3	7	(2)	1	1	4	10
TOTALS		591:02	61	163	37.4	26	61	42.6	76	109	185	17	35	47	62	148
AVERAGES		24:37	2.5	6.8	--	1.1	2.5	--	3.2	4.5	7.7	0.7	1.5	2.0	2.6	6.2

which the player performed in a superior manner also will become evident. In this example, Walter's play improved greatly over the final 10 games of the season. Beginning with the second Maryville game, Walters shot nearly 50% from the field and averaged over nine points an outing to easily improve on the numbers compiled during the first 14 games.

The second method of recording top-game performances is seen in Table 4.8. The high-game total is given for each player on the team. Home games are indicated by italics, accomplishments in a starting role are designated by a "+", and games won by the player's team are shown with an asterisk. Other information, such as date and opponent, is included within each block.

This approach does not allow a comparative view of an individual's season performance in a game-by-game manner as does Table 4.7. However, this method is recommended for the researcher concerned only with the high-game performances and not interested in related interpretive data. A person interested in documenting high-game performances over a player's career would find the chart in Table 4.8 the most practical and easily adaptable of the two shown.

Since the totals for each player may be taken from different games, there is no relationship between field goals made, free throws made, and total points. For this reason, no team totals are included on charts of this type.

Table 4.8. INDIVIDUAL HIGH GAME PERFORMANCES

NAME	TIME	FGM	FGA	FGM%	FTM	FTA	FTM%	REBOUNDS			AST	STE	ERR	FOU	PTS
								OFF	DEF	TOT					
Bernstein	38:56 *+ Tusc 2-19	8 + Mary 12-14	22 + Mary 12-14	78% + CorAc 1-26	5 + Mary 2-1	11 + Mary 2-1	100% + SeaSo 11-30	7 *+ Tusc 2-19	11 + Tusc 12-1	14 * Tusc 1-19	2 * Tusc 1-19	4 + Maple 12-5	6 + Cedar 2-16	5 + Mary 12-14	19 + Mary 12-14
Martin	35:19 *+ Tusc 12-1	8 + Maple 12-5	16 *+ Tusc 1-19	63% *+ MonCo 2-2	6 *+ Bism 11-27	8 *+ Bism 11-27	100% * Maple 2-18	3 *+ MonCo 1-12	8 *+ Bism 1-14	10 *+ Bism 1-14	6 + South 1-25	3 *+ Bism 11-27	5 *+ Tusc 1-19	4 *+ MonCo 1-12	16 + Maple 12-5
Walters	35:38 *+ Tusc 2-19	7 *+ Tusc 2-19	17 + CorAc 1-26	100% + SeaSo 11-30	5 *+ Maple 2-18	9 + CorAc 2-22	83% *+ Maple 2-18	9 + CorAc 1-26	10 *+ Maple 2-18	18 + CorAc 1-26	2 * Bism 1-14	5 + Mary 2-1	8 + CorAc 2-12	5 *+ Bism 11-27	17 + CorAc 2-22
Kidd	32:12 + CorAc 1-24	9 + SeaSo 11-30	19 + SeaSo 11-30	100% Cedar 2-16	4 + CorAc 2-22	6 *+ MonCo 1-12	80% + CorAc 2-22	7 + Tusc 12-1	8 *+ Maple 1-12	13 *+ MonCo 1-12	3 + Wesl 12-7	4 *+ Bism 1-14	6 + Tusc 12-1	5 + CorAc 2-22	20 + SeaSo 11-30
Stone	33:52 + CorAc 1-26	5 + South 1-15	14 + CorAc 1-26	67% Cedar 2-16	6 *+ Maple 2-18	10 *+ Maple 2-18	100% + South 2-25	2 + Mary 2-1	6 + CorAc 2-22	8 + CorAc 2-22	7 *+ Tusc 2-19	4 *+ Maple 2-18	5 *+ Maple 2-18	4 *+ Maple 2-18	12 *+ Maple 2-18
Jones	28:28 + Wesl 1-17	8 * MonCo 2-2	15 * MonCo 2-2	100% * Tusc 2-19	4 * Maple 2-18	4 * Maple 2-18	100% * Maple 2-18	10 * MonCo 2-2	7 *+ Tusc 1-19	15 * MonCo 2-2	2 Mary 2-1	2 * Bism 11-27	2 CorAc 2-12	5 * Bism 11-27	16 * MonCo 2-2
Alexander	37:52 *+ Bism 11-27	7 *+ MonCo 1-12	14 *+ MonCo 1-12	100% *+ Maple 2-18	7 *+ Bism 11-27	8 *+ Bism 11-27	100% + Long 1-28	8 *+ MonCo 1-12	7 + Cedar 2-16	8 *+ MonCo 1-12	12 *+ MonCo 1-12	6 + Tusc 12-1	7 + SeaSo 11-30	5 CorAc 1-26	18 *+ MonCo 1-12
Gregory	23:09 + South 1-25	7 *+ Tusc 2-19	13 *+ Tusc 2-19	100% *+ South 2-15	4 SeaSo 11-30	4 SeaSo 11-30	100% SeaSo 11-30	4 Long 1-28	4 *+ South 2-15	6 * Bism 11-27	3 *+ MonCo 1-12	2 *+ Tusc 1-19	2 * Maple 2-18	4 + Maple 12-5	14 *+ Tusc 2-19
Simpson	23:15 * MonCo 1-12	6 * MonCo 1-12	11 * MonCo 1-12	67% Wesl 1-17	2 * Bism 11-27	3 * Bism 11-27	67% * Bism 11-27	2 Mary 2-1	3 Cedar 12-8	3 Cedar 12-8	5 *+ MonCo 2-2	2 *+ MonCo 2-2	4 Maple 12-5	4 Maple 12-5	12 * MonCo 1-12
Knight	16:05 * Bism 1-14	2 * Bism 1-14	5 * Bism 1-14	100% Mary 12-14		1 Cedar 12-8		1 Tusc 12-1	2 Tusc 12-1	3 Tusc 12-1	5 * Bism 1-14	2 Bism 11-27	3 Long 2-5	2 South 1-25	4 * Bism 1-14
Wright	10:34 * Bism 1-14	1 CorAc 2-12	1 CorAc 2-12	100% CorAc 2-12		2 * Bism 1-14		4 * Bism 1-14	2 * Bism 1-14	6 * Bism 1-14	1 * Bism 1-14	1 Wesl 1-17	2 * Bism 1-14	2 Wesl 1-17	2 CorAc 2-12
Evans	13:09 * Bism 1-14		5 * Bism 1-14					1 Mary 2-1	2 CorAc 2-12	2 CorAc 2-12	3 CorAc 2-12		3 Cedar 2-16	2 Cedar 12-8	
Keele	4:10 Cedar 12-8					1 Cedar 12-8		2 Cedar 12-8		2 Cedar 12-8	1 Maple 12-5			1 Maple 12-5	

Year-by-Year Individual Cumulative Records

A season-by-season statistical breakdown of a player's career is another valuable aid to the researcher. Although the illustration shown in Table 4.9 deals with a professional performer, very little modification would be necessary to adapt the chart for a high school or college player.

Listed at the top of the chart is the player's name, height, weight, birthdate, birthplace, college, and all trades or transactions in which the player has been involved. The data are divided into regular season and playoff competition with the appropriate statistical areas listed under each.

Career Records of All Players

Although compiling the career statistics for all players that have participated in the program is a monumental undertaking, the initial effort should prove worthwhile when retrieval of the information becomes necessary. If the recorder does not wish to devote the time to include all performers, listing only those who have reached statistical milestones should be sufficient to provide most of the required data.

The example in Table 4.10 lists all players who have scored 1000 points in descending order of the acquired statistic. The performers also may be listed in alphabetical or chronological order.

Table 4.9. INDIVIDUAL CAREER RECORDS

ROBERT DAILEY

HEIGHT: 6-8WEIGHT: 230BIRTHDATE: 7-23-49BIRTHPLACE: OGDEN, UTAHCOLLEGE: STATE U.

Traded by Twin Cities to Golden County for Dave Edsell on June 16, 1974

Traded by Golden County to Eastern State for Tom Ramsey and Duke Drake on December 25, 1978

Given unconditional release by Eastern State on August 10, 1980

		REGULAR SEASON																					
		---REBOUNDS---																					
YEAR	TEAM	GAM	TIME	FGM	FGA	FGM%	FTM	FTA	FTM%	OFF	DEF	TOT	AVG.	AST	AVG	STE	AVG	ERR	AVG	FOU	DIS	PTS	AVG
71-72	Twin Cities	79	3344	973	1895	51.3	549	863	63.6	648	852	1500	18.9	210	2.7	147	1.9	333	4.2	281	6	2495	31.6
72-73	Twin Cities	80	3446	840	1595	52.7	553	821	67.4	522	788	1310	16.4	233	2.9	166	2.1	225	2.8	283	7	2233	27.9
73-74	Twin Cities	80	3394	811	1582	51.3	537	825	65.1	486	875	1361	17.0	126	1.6	101	1.3	291	3.6	300	7	2159	27.0
74-75	Golden County	80	3301	733	1441	50.9	515	752	68.5	399	767	1166	14.6	191	2.4	114	1.4	301	3.8	260	2	1981	24.8
75-76	Golden County	80	3352	695	1373	50.6	430	689	62.4	524	730	1254	15.7	235	2.9	97	1.2	266	3.3	294	9	1820	22.8
76-77	Golden County	79	3010	565	1084	52.1	369	580	63.7	405	639	1064	13.5	206	2.6	112	1.4	267	3.4	275	5	1499	19.0
77-78	Golden County	82	2695	511	944	54.1	350	529	66.2	388	573	961	11.7	164	2.0	123	1.5	317	3.9	259	3	1372	16.7
78-79	Golden Co./East. St.	88	3159	563	1103	51.0	401	618	64.9	466	635	1101	12.5	176	2.0	116	1.3	285	3.2	320	5	1527	17.4
79-80	Eastern State	79	2028	351	671	52.3	215	373	57.6	241	466	707	8.9	143	1.8	82	1.0	321	4.1	260	5	917	11.6
9 Year Totals		727	27729	6042	11688	51.7	3919	6050	64.8	4079	6345	10424	14.3	1684	2.3	1058	1.5	2606	3.6	2532	49	16003	22.0

		PLAYOFF																						
		---REBOUNDS---																						
YEAR	TEAM	GAM	TIME	FGM	FGA	FGM%	FTM	FTA	FTM%	OFF	DEF	TOT	AVG.	AST	AVG	STE	AVG	ERR	AVG	FOU	DIS	PTS	AVG	
74-75	Golden County	10	427	74	158	46.8	61	92	66.3	52	95	151	15.1	21	2.1	14	1.4	26	2.6	38	0	209	20.9	
76-77	Golden County	4	157	28	54	51.9	17	29	58.6	20	46	66	16.5	12	3.0	8	2.0	18	4.5	15	0	73	18.3	
77-78	Golden County	6	277	45	107	42.1	30	48	62.5	33	63	96	16.0	13	2.2	12	2.0	17	2.8	22	0	120	20.0	
79-80	Eastern State	9	368	59	126	46.8	33	46	71.7	56	84	140	15.6	15	1.7	16	1.8	18	2.0	32	0	151	16.8	
4 Year Totals		29	1229	206	445	46.5	141	215	65.6	151	292	453	15.6	61	2.1	50	1.7	79	2.7	107	0	553	19.1	

Table 4.10. CAREER RECORDS OF ALL PLAYERS

PLAYER	YEARS	GAM	TIME	FGM	FGA	FGM%	FTM	FTA	FTM%	----REBOUNDS----				AST	AVG	STE	AVG	ERR	AVG	FOU	DIS	PTS	AVG.
										OFF	DEF	TOT	AVG.										
Dixon	75-79	115	4255	1126	2146	52.5	211	287	73.5	321	634	955	8.3	81	0.7	92	0.8	495	4.3	368	16	2436	21.4
Ellis	74-78	102	3672	1063	2075	51.2	185	269	68.8	408	520	928	9.1	133	1.3	112	1.1	214	2.1	277	8	2311	22.7
Davidson	71-75	99	3267	968	2040	47.5	106	150	70.7	529	600	1129	11.4	168	1.7	238	2.4	129	1.3	188	3	2042	20.6
Banks	73-77	95	3515	916	1801	50.9	141	183	77.0	486	540	1026	10.8	133	1.4	162	1.7	352	3.7	289	14	1973	20.8
Prentice	68-72	91	2821	927	1933	48.0	117	204	57.4	243	430	673	7.4	82	0.9	118	1.3	328	3.6	263	8	1971	21.7
Parker	70-73	89	2892	824	1599	51.5	95	160	59.4	190	282	472	5.3	89	1.0	71	0.8	329	3.7	333	9	1743	19.6
Bridges	72-76	101	3666	763	1611	47.4	163	226	72.1	131	182	313	3.1	242	2.4	91	0.9	414	4.1	271	7	1689	16.7
Ritzel	63-67	96	3273	750	1407	53.3	167	213	78.4	298	528	826	8.6	211	2.2	106	1.1	480	5.0	371	10	1667	17.4
Jesse	65-69	96	2966	645	1426	45.2	223	350	63.7	360	523	883	9.2	355	3.7	192	2.0	317	3.3	350	12	1513	15.8
Darden	71-75	109	3815	625	1268	49.3	251	381	65.9	241	457	698	6.4	174	1.6	109	1.0	294	2.7	262	13	1501	13.8
Elmer	70-74	97	3298	619	1351	45.8	189	270	70.0	300	321	621	6.4	369	3.8	68	0.7	281	2.9	349	18	1427	14.7
Cooper	67-71	98	3371	546	1181	45.7	246	328	75.0	185	432	617	6.3	196	2.0	49	0.5	147	1.5	312	17	1338	13.7
Michel	71-74	83	2556	610	1370	44.5	112	177	63.3	304	368	672	8.1	141	1.7	66	0.8	100	1.2	223	7	1332	16.0
Funderbunk	64-68	86	2924	578	1291	44.8	148	245	60.4	223	379	602	7.0	292	3.4	112	1.3	327	3.8	199	4	1304	15.2
Scott	77-80	85	2830	561	1115	50.3	100	176	56.8	105	252	357	4.2	340	4.0	145	1.7	272	3.2	231	6	1222	14.4
Clarke	64-68	92	3404	490	983	49.8	203	281	72.2	117	233	350	3.8	322	3.5	129	1.4	175	1.9	251	10	1183	12.9
Wood	72-76	103	3502	445	1047	42.5	184	257	71.6	201	263	464	4.5	278	2.7	206	2.0	175	1.7	300	8	1074	10.4
Davey	75-79	111	3885	434	952	45.6	154	192	80.2	439	682	1121	10.1	588	5.3	244	2.2	255	2.3	310	9	1022	9.2
Montgomery	74-78	112	3808	399	830	48.1	208	326	63.8	500	732	1232	11.0	560	5.0	190	1.7	448	4.0	360	8	1006	9.0
White	68-72	93	2790	404	902	44.8	194	291	66.7	417	485	902	9.7	158	1.7	177	1.9	316	3.4	297	12	1002	10.8
Barkley	69-73	100	3177	428	1011	42.3	144	200	72.0	134	270	404	4.0	488	4.8	236	2.4	455	4.6	309	5	1000	10.0

Top-Ten Charts

Outstanding game, season, and career performances of individual players over the history of the basketball program will become clearer if top-ten lists are devised. Examples are given of a top-ten season performance chart (Table 4.11) and a top-ten career performance chart (Table 4.12). The 15 statistical categories listed on each chart should not be viewed as all-inclusive. Areas could be added or deleted at the discretion of the statistician. Top-ten lists may be developed for quarters and halves as well.

One difference exists between the season and career charts. The year of the performance is included on the season sheet, while on the career chart the number of years played by each player appears next to that individual's name. The academic classification appears next to the player's name on the season chart.

A minimum number of shots must be attempted before a player may be listed in the field goal percentage or free throw percentage categories. In Tables 4.11 and 4.12, a minimum of 100 field goal attempts and 15 free throw attempts were the required standards.

All-Time Individual Records

Relating closely to the individual top-ten lists is a chart that designates all-time leaders in different areas of

Table 4.11. INDIVIDUAL TOP TEN LISTS, SEASON

FIELD GOALS MADE		FIELD GOALS ATTEMPTED		FIELD GOAL PERCENTAGE	
1. Stone ²	160 (77-78)	1. Stone ²	448 (77-78)	1. Walters ¹	41.9 (78-79)
2. Stone ³	159 (78-79)	2. Stone ³	383 (78-79)	2. Stone ³	41.5 (78-79)
3. Stone ¹	126 (76-77)	3. Spencer ³	333 (76-77)	3. Stone ¹	41.4 (76-77)
4. Bernstein ¹	106 (79-80)	4. Stone ¹	304 (76-77)	4. Martin ²	38.0 (79-80)
5. Walters ¹	104 (78-79)	5. Lawson ⁴	293 (77-78)	5. Walters ²	37.4 (79-80)
6. Spencer ³	97 (76-77)	6. Bernstein ¹	286 (79-80)	6. Bernstein ¹	37.1 (79-80)
7. Lawson ⁴	92 (77-78)	7. Lawson ³	282 (76-77)	7. Stone ²	35.7 (77-78)
8. Lawson ³	89 (76-77)	8. Chambers ³	282 (76-77)	8. Jones ¹	35.5 (79-80)
9. Chambers ³	88 (76-77)	9. Spencer ²	254 (75-76)	9. Alexander ¹	34.7 (79-80)
10. Martin ¹	81 (78-79)	10. Walters ¹	248 (78-79)	10. Martin ¹	33.9 (78-79)
FREE THROWS MADE		FREE THROWS ATTEMPTED		FREE THROW PERCENTAGE	
1. Walters ¹	77 (78-79)	1. Lawson ⁴	159 (77-78)	1. Tucker ⁴	80.8 (74-75)
2. Lawson ⁴	76 (77-78)	2. Walters ¹	154 (78-79)	2. Martin ¹	80.3 (78-79)
3. Spencer ³	67 (76-77)	3. Lawson ³	120 (76-77)	3. Chambers ²	68.3 (75-76)
4. Stone ³	61 (78-79)	4. Spencer ³	113 (76-77)	4. Alexander ¹	64.9 (79-80)
5. Martin ¹	57 (78-79)	5. Stone ³	103 (78-79)	5. Stone ¹	64.4 (76-77)
6. Lawson ³	52 (76-77)	6. Lawson ²	96 (75-76)	6. Merrill ¹	61.1 (75-76)
7. Stone ²	49 (77-78)	7. Bernstein ¹	88 (79-80)	7. Stone ⁴	60.9 (79-80)
8. Bernstein ¹	39 (79-80)	8. Stone ²	83 (77-78)	8. Spencer ³	59.3 (76-77)
9. Lawson ²	34 (75-76)	9. Martin ¹	71 (78-79)	9. Stone ³	59.2 (78-79)
10. Spencer ²	33 (75-76)	10. Spencer ²	70 (75-76)	10. Stone ²	59.0 (77-78)
REBOUNDS		STEALS		ASSISTS	
1. Spencer ³	353 (76-77)	1. Spencer ³	80 (76-77)	1. McReynolds ⁴	158 (78-79)
2. Lawson ⁴	310 (77-78)	2. Stone ²	76 (77-78)	2. Alexander ¹	127 (79-80)
3. Lawson ³	283 (76-77)	3. Stone ³	63 (78-79)	3. McReynolds ³	121 (77-78)
4. Bernstein ¹	241 (79-80)	4. Spencer ²	56 (75-76)	4. McReynolds ²	81 (76-77)
5. Spencer ²	210 (75-76)	5. Alexander ¹	55 (79-80)	5. Stone ¹	73 (76-77)
6. Walters ¹	197 (78-79)	6. Stone ¹	52 (76-77)	6. Spencer ³	68 (76-77)
7. Walters ²	185 (79-80)	7. Barnhart ³	49 (76-77)	7. Stone ³	65 (78-79)
8. Stone ³	181 (78-79)	8. Lawson ⁴	49 (77-78)	8. Stone ²	58 (77-78)
9. Alexander ¹	171 (79-80)	9. McReynolds ⁴	46 (77-78)	9. Martin ²	48 (79-80)
10. Lawson ²	157 (75-76)	10. Lawson ²	44 (75-76)	10. Lawson ⁴	47 (77-78)
GAMES PLAYED		TOTAL POINTS		POINT AVERAGE	
1. Barnhart ³	26 (76-77)	1. Stone ³	379 (78-79)	1. Stone ³	18.1 (78-79)
2. Chambers ³	26 (76-77)	2. Stone ²	369 (77-78)	2. Stone ²	16.0 (77-78)
3. McReynolds ²	26 (76-77)	3. Walters ¹	285 (78-79)	3. Walters ¹	12.4 (78-79)
4. Spencer ³	26 (76-77)	4. Stone ¹	281 (76-77)	4. Lawson ⁴	11.3 (77-78)
5. Stone ¹	26 (76-77)	5. Spencer ³	261 (76-77)	5. Stone ¹	10.8 (76-77)
6. Lawson ³	25 (76-77)	6. Lawson ⁴	260 (77-78)	6. Bernstein ¹	10.5 (79-80)
7. Crawley ¹	25 (76-77)	7. Bernstein ¹	251 (79-80)	7. Spencer ²	10.2 (75-76)
8. Martin ²	24 (79-80)	8. Lawson ³	230 (76-77)	8. Spencer ³	10.0 (76-77)
9. Walters ²	24 (79-80)	9. Martin ¹	219 (78-79)	9. Martin ¹	9.5 (78-79)
10. Alexander ¹	24 (79-80)	10. Chambers ³	228 (76-77)	10. Lawson ³	9.2 (76-77)
ERRORS		PERSONAL FOULS		DISQUALIFICATIONS	
1. Chambers ³	98 (76-77)	1. Spencer ³	94 (76-77)	1. Kidd ¹	8 (79-80)
2. McReynolds ³	91 (77-78)	2. Kidd ¹	88 (79-80)	2. Spencer ³	8 (76-77)
3. McReynolds ²	90 (76-77)	3. McReynolds ³	69 (77-78)	3. Spencer ²	5 (75-76)
4. Spencer ³	88 (76-77)	4. Walters ¹	69 (78-79)	4. Walters ¹	5 (78-79)
5. McReynolds ⁴	84 (78-79)	5. Spencer ²	68 (75-76)	5. Walters ²	4 (79-80)
6. Stone ²	84 (77-78)	6. Alexander ¹	67 (79-80)	6. Bernstein ¹	3 (79-80)
7. Alexander ¹	82 (79-80)	7. McReynolds ⁴	64 (78-79)	7. Lawson ⁴	3 (77-78)
8. Stone ¹	79 (76-77)	8. Walters ²	62 (79-80)	8. McReynolds ³	3 (77-78)
9. McReynolds ¹	78 (75-76)	9. Bernstein ¹	61 (79-80)	9. McReynolds ⁴	3 (78-79)
10. Lawson ³	76 (76-77)	10. Lawson ³	60 (76-77)	10. Six tied with	2 (74-80)

Table 4.12. INDIVIDUAL TOP TEN LISTS, CAREER

FIELD GOALS MADE		FIELD GOALS ATTEMPTED		FIELD GOAL PERCENTAGE	
1. Sandy Stone ⁴	475	1. Sandy Stone ⁴	1235	1. Deb Walters ²	40.1
2. Louise Lawson ⁴	234	2. Louise Lawson ⁴	792	2. Sandy Stone ⁴	38.5
3. Elaine Spencer ³	206	3. Elaine Spencer ³	708	3. Brenda Bernstein ¹	37.1
4. Connie McReynolds ⁴	178	4. Connie McReynolds ⁴	651	4. Linda Martin ²	35.8
5. Deb Gregory ³	167	5. Deb Gregory ³	572	5. Judy Jones ¹	35.5
6. Deb Walters ²	165	6. Becky Barnhart ³	522	6. Jo Alexander ¹	34.7
7. Linda Martin ²	159	7. Linda Chambers ³	504	7. Janet Anthony ¹	32.7
8. Linda Chambers ³	145	8. Linda Martin ²	444	8. Louise Lawson ⁴	29.5
9. Becky Barnhart ³	125	9. Deb Walters ²	411	9. Deb Gregory ³	29.2
10. Brenda Bernstein ¹	106	10. Brenda Bernstein ¹	286	10. Elaine Spencer ³	29.1
FREE THROWS MADE		FREE THROWS ATTEMPTED		FREE THROW PERCENTAGE	
1. Louise Lawson ⁴	165	1. Louise Lawson ⁴	403	1. Sheila Tucker ¹	80.8
2. Sandy Stone ⁴	153	2. Sandy Stone ⁴	254	2. Linda Martin ²	75.6
3. Elaine Spencer ³	115	3. Deb Walters ²	215	3. Jo Alexander ¹	64.9
4. Deb Walters ²	103	4. Elaine Spencer ³	212	4. Jenny Merrill ¹	61.1
5. Linda Martin ²	68	5. Linda Chambers ³	110	5. Sandy Stone ⁴	60.2
6. Linda Chambers ³	64	6. Becky Barnhart ³	107	6. Polly Steele ¹	58.8
7. Becky Barnhart ³	42	7. Linda Martin ²	90	7. Linda Chambers ³	58.2
8. Brenda Bernstein ¹	39	8. Brenda Bernstein ¹	88	8. Elaine Spencer ³	54.2
9. Connie McReynolds ⁴	28	9. Connie McReynolds ⁴	80	9. Judy Jones ¹	52.4
10. Jo Alexander ¹	24	10. Janet Anthony ¹	54	10. Deb Walters ²	47.9
REBOUNDS		STEALS		ASSISTS	
1. Louise Lawson ⁴	841	1. Sandy Stone ⁴	212	1. Connie McReynolds ⁴	398
2. Elaine Spencer ³	685	2. Connie McReynolds ⁴	162	2. Sandy Stone ⁴	236
3. Sandy Stone ⁴	497	3. Elaine Spencer ³	159	3. Jo Alexander ¹	127
4. Deb Walters ²	382	4. Louise Lawson ⁴	135	4. Louise Lawson ⁴	123
5. Connie McReynolds ⁴	315	5. Becky Barnhart ³	102	5. Elaine Spencer ³	114
6. Becky Barnhart ³	278	6. Linda Chambers ³	82	6. Linda Martin ²	78
7. Brenda Bernstein ¹	241	7. Deb Walters ²	68	7. Deb Gregory ³	67
8. Linda Martin ²	217	8. Linda Martin ²	56	8. Linda Chambers ³	66
9. Deb Gregory ³	196	9. Deb Gregory ³	53	9. Becky Barnhart ³	64
10. Janet Anthony ¹	171	10. Jo Alexander ¹	52	10. Deb Walters ²	39
GAMES PLAYED		TOTAL POINTS		POINT AVERAGE	
1. Connie McReynolds ⁴	90	1. Sandy Stone ⁴	1103	1. Sandy Stone ⁴	13.3
2. Sandy Stone ⁴	83	2. Louise Lawson ⁴	633	2. Brenda Bernstein ¹	10.5
3. Louise Lawson ⁴	78	3. Elaine Spencer ³	527	3. Elaine Spencer ³	9.4
4. Deb Gregory ³	69	4. Deb Walters ²	433	4. Deb Walters ²	9.2
5. Becky Barnhart ³	58	5. Linda Martin ²	386	5. Linda Martin ²	8.2
6. Elaine Spencer ³	56	6. Connie McReynolds ⁴	384	6. Louise Lawson ⁴	8.1
7. Linda Chambers ³	56	7. Linda Chambers ³	350	7. Linda Chambers ³	6.3
8. Linda Martin ²	47	8. Deb Gregory ³	345	8. Vivian Kidd ¹	5.8
9. Deb Walters ²	47	9. Becky Barnhart ³	292	9. Judy Jones ¹	5.2
10. Kathy Hawkins ³	46	10. Brenda Bernstein ¹	251	10. Jo Alexander ¹	5.2
ERRORS		PERSONAL FOULS		DISQUALIFICATIONS	
1. Connie McReynolds ⁴	343	1. Connie McReynolds ⁴	247	1. Elaine Spencer ³	14
2. Sandy Stone ⁴	240	2. Elaine Spencer ³	199	2. Deb Walters ²	9
3. Louise Lawson ⁴	211	3. Louise Lawson ⁴	185	3. Connie McReynolds ⁴	8
4. Linda Chambers ³	194	4. Sandy Stone ⁴	149	4. Vivian Kidd ¹	8
5. Elaine Spencer ³	159	5. Deb Walters ²	131	5. Louise Lawson ⁴	6
6. Deb Walters ²	106	6. Becky Barnhart ³	114	6. Sandy Stone ⁴	4
7. Becky Barnhart ³	98	7. Vivian Kidd ¹	88	7. Becky Barnhart ³	3
8. Linda Martin ²	92	8. Linda Chambers ³	85	8. Brenda Bernstein ¹	3
9. Jo Alexander ¹	82	9. Jo Alexander ¹	67	9. Jo Alexander ¹	2
10. Deb Gregory ³	80	10. Deb Gregory ³	63	10. Judy Jones ¹	2

the game. Although not shown here, a similar chart could be produced for each season.

Table 4.13 gives an example of how all-time leaders may be listed. Thirteen statistical areas are listed so as to give a quick view of the leaders and the dates of their accomplishments. Half, game, season, and career standards are noted depending on the category.

A chart of this type would, in some ways, be repetitious if top-ten performance charts were documented elsewhere for game, season, and career action. However, the inclusion of a summary such as this should aid the researcher when the sole purpose is to locate the leaders only. Additionally, although it may not be feasible to include a chart dealing with the top-ten individual performances of a half, the illustration in this example permits the documentation for those areas in which data are recorded for halves of games.

Summary

The suggestions given in this chapter are not the only options available to the statistician when recording individual statistics. Other charts may be devised depending on the needs of the situation. However, the forms which have been illustrated are thought by the writer to be the best suited for all levels of basketball competition.

Table 4.13. INDIVIDUAL ALL-TIME LEADERS

MOST FIELD GOALS MADE, HALF : 10 by Sandy Stone on 1-29-79 (2nd half) GAME : 14 by Sandy Stone on 1-29-79 SEASON: 160 by Sandy Stone during the 1977-78 season CAREER: 475 by Sandy Stone from 1976-1980
MOST FIELD GOALS ATTEMPTED, HALF : 20 by Elaine Spencer on 2-20-76 (2nd half) GAME : 31 by Sandy Stone on 2-20-78 SEASON: 448 by Sandy Stone during the 1977-78 season CAREER: 1235 by Sandy Stone from 1976-1980
BEST FIELD GOAL PERCENTAGE, HALF : 100.0 done on many occasions GAME : 75.0 by Brenda Bernstein on 1-26-80 SEASON: 41.9 by Deb Walters during the 1978-79 season CAREER: 40.1 by Deb Walters from 1978-1980
MOST FREE THROWS MADE, HALF : 7 by Louise Lawson on 11-21-77 (2nd half) GAME : 10 by Sandy Stone on 1-21-78 SEASON: 77 by Deb Walters during the 1978-79 season CAREER: 165 by Louise Lawson from 1974-1978
MOST FREE THROWS ATTEMPTED, HALF : 11 by Louise Lawson 2-18-78 (2nd half) GAME : 16 by Sandy Stone on 1-21-78 SEASON: 159 by Louise Lawson during the 1977-78 season CAREER: 403 by Louise Lawson from 1974-1978
BEST FREE THROW PERCENTAGE, HALF : 100.0 done on many occasions GAME : 100.0 done on many occasions SEASON: 80.8 by Susan Tucker during the 1974-75 season CAREER: 80.8 by Susan Tucker from 1974-1975
MOST OFFENSIVE REBOUNDS, HALF : 10 by Louise Lawson on 1-29-77 (1st half) GAME : 13 by Louise Lawson on 1-29-77 SEASON: 167 by Elaine Spencer during the 1976-77 season CAREER: 389 by Louise Lawson from 1974-1978
MOST DEFENSIVE REBOUNDS, HALF : 12 by Elaine Spencer on 2- 8-75 (2nd half) GAME : 18 by Elaine Spencer on 2- 8-75 SEASON: 185 by Louise Lawson during the 1977-78 season CAREER: 452 by Louise Lawson from 1974-1978
MOST TOTAL REBOUNDS, HALF : 16 by Louise Lawson on 1-29-77 (1st half) GAME : 27 by Louise Lawson on 1-29-77 SEASON: 353 by Elaine Spencer during the 1976-77 season CAREER: 841 by Louise Lawson from 1974-1978
MOST ASSISTS, HALF : 8 by Connie McReynolds on 1-29-79 (2nd half) GAME : 12 by Jo Alexander on 1-12-80 SEASON: 158 by Connie McReynolds during the 1978-79 season CAREER: 398 by Connie McReynolds from 1975-1979
MOST STEALS, HALF : 6 by Jo Alexander on 1-14-80 (1st half) GAME : 9 by Elaine Spencer on 2-25-77 SEASON: 80 by Elaine Spencer during the 1976-77 season CAREER: 212 by Sandy Stone from 1976-1980
MOST ERRORS, HALF : 8 by Connie McReynolds on 11-28-77 (1st half) GAME : 12 by Connie McReynolds on 11-28-77 SEASON: 98 by Linda Chambers during the 1976-77 season CAREER: 343 by Connie McReynolds from 1975-1979
MOST PERSONAL FOULS, SEASON: 94 by Elaine Spencer during the 1976-77 season CAREER: 247 by Connie McReynolds from 1975-1979
MOST DISQUALIFICATIONS, SEASON: 8 by Vivian Kidd during the 1979-80 season CAREER: 14 by Elaine Spencer from 1974-1977
MOST TOTAL POINTS SCORED, HALF : 24 by Sandy Stone on 1-29-79 (2nd half) GAME : 32 by Sandy Stone on 1-29-79 SEASON: 379 by Sandy Stone during the 1978-79 season CAREER: 1103 by Sandy Stone from 1976-1980

Chapter 5

TEAM STATISTICS

Recording team records is as vital in the overall statistical process as is the keeping of individual data. Although the methods of charting team statistics may differ to some degree, the basic categories remain similar to those compiled for the individual. Some suggested techniques for detailing team information are discussed in this chapter.

Game-by-Game Statistics

Unless a systematic method is utilized to record game-by-game performances of a team and its opponents, coaches or other interested individuals will face a laborious task sorting through many sheets of information when attempting to compare the squad's performance over the course of a season. The chart shown in Table 5.1 gives a clear view of both the team and the opponent's performance for each game during a particular season.

The date of the game, the opponent, the site, and the outcome are included on the sheet along with the major statistical areas. Final totals for both the featured team and the opponents are segmented into home, away, and neutral

Table 5.1. TEAM AND OPPONENT STATISTICS, GAME-BY-GAME

		1979-80																					
		STATE UNIVERSITY																					
		--REBOUNDS--																					
DATE	OPPONENT	W/L	FGM	FGA	FGM%	FTM	FTA	FTM%	OFF	DEF	TOT	AST	STE	ERR	FOU	PTS	GER						
11-27	at Bismark	W	24	72	33.3	16	24	66.7	24	29	53	10	10	21	25	64	36						
11-30	Seaside South	L	21	57	36.9	9	13	69.2	12	27	39	15	7	19	8	51	41						
12- 1	Tusculum	L	23	60	38.3	3	13	23.1	21	28	49	18	12	23	15	49	37						
12- 5	at Maplewood	L	22	68	32.4	6	17	35.3	13	33	46	17	11	18	20	50	36						
12- 7	Wesleyan	L	21	67	31.3	4	10	40.0	12	21	33	14	16	15	10	48	24						
12- 8	Cedarville	L	16	60	26.0	7	16	43.8	14	31	45	11	6	18	15	37	13						
12-14	Maryville	L	21	59	35.6	6	17	35.3	14	19	33	14	9	16	13	48	26						
1-12	Montrose County	W	27	78	34.6	10	15	66.7	25	28	53	15	4	13	21	64	42						
1-14	Bismark	W	26	77	33.8	3	10	30.0	25	26	51	17	17	24	19	55	43						
1-17	at Wesleyan	L	12	54	22.2	8	15	53.3	8	21	29	9	8	23	16	32	-2						
1-19	at Tusculum	W	17	60	28.3	5	14	35.7	19	27	46	13	16	16	17	39	27						
1-25	Southwestern	L	23	59	39.0	5	8	62.5	19	17	36	16	7	11	14	51	41						
1-26	Corning Academy	L	17	66	25.8	1	5	20.0	24	32	56	9	9	19	20	35	13						
1-28	at Longwood	L	16	65	24.6	3	6	50.0	11	23	34	13	9	19	11	35	9						
2- 1	at Maryville	L	18	65	27.7	6	13	46.2	17	19	36	14	12	17	19	42	16						
2- 2	at Montrose County	W	31	78	39.7	2	5	40.0	17	35	52	21	9	14	19	64	65						
2- 5	Longwood	L	18	60	30.0	5	9	55.6	12	21	33	11	8	20	12	41	16						
2-12	at Corning Academy	L	24	66	36.4	0	6	0.0	20	33	53	14	12	24	20	48	35						
2-15	at Southwestern	W	25	64	39.1	6	10	60.0	13	31	44	12	7	12	12	56	51						
2-16	at Cedarville	L	14	41	34.1	6	14	42.9	6	24	30	10	2	18	17	34	17						
2-18	Maplewood	W	24	63	38.1	19	28	64.3	10	32	42	14	17	19	26	66	61						
2-19	Tusculum	W	27	63	42.9	2	4	50.0	13	27	40	21	9	12	12	56	63						
2-22	* Corning Academy	L	23	63	36.5	12	20	60.0	17	29	46	16	12	21	22	58	46						
2-23	* Tusculum	L	21	52	40.4	7	19	36.8	17	25	42	12	6	16	20	49	33						
State University Totals		8-16	510	1517	33.6	150	311	48.2	583	648	1031	336	229	428	412	1170	787						
		--REBOUNDS--																					
SITE		W/L	FGM	FGA	FGM%	FTM	FTA	FTM%	OFF	DEF	TOT	AVG.	AST	STE	ERR	FOU	PTS	PTS.	GER.				
Home		4-8	263	769	34.2	73	148	49.3	201	319	520	43.3	175	115	203	186	539	49.9	34.8				
Away		4-6	203	633	32.1	58	124	46.8	148	275	423	42.3	133	96	182	185	464	46.4	29.0				
Neutral Court		0-2	44	115	38.3	19	39	48.7	34	54	88	44.0	28	18	37	42	107	53.5	39.5				
		OPPONENTS																					
		--REBOUNDS--																					
DATE	OPPONENT	W/L	FGM	FGA	FGM%	FTM	FTA	FTM%	OFF	DEF	TOT	AST	STE	ERR	FOU	PTS	GER						
11-27	Bismark	L	19	57	33.3	15	30	50.0	20	29	49	8	13	25	23	53	25						
11-30	Seaside South	W	31	83	37.4	6	10	60.0	27	27	54	7	18	15	15	69	47						
12- 1	Tusculum	W	21	76	27.6	10	16	62.5	31	23	54	10	18	19	19	32	23						
12- 5	Maplewood	W	22	81	27.2	16	32	50.0	37	40	77	11	12	16	20	62	34						
12- 7	Wesleyan	W	31	64	48.4	8	12	66.7	14	38	52	18	10	11	10	70	88						
12- 8	Cedarville	W	32	74	43.2	4	7	57.1	14	37	51	22	16	13	16	68	85						
12-14	Maryville	W	33	76	43.3	2	5	40.0	26	29	57	14	9	17	12	68	55						
1-12	Montrose County	L	26	69	37.7	11	23	47.8	23	30	53	12	7	22	17	63	35						
1-14	Bismark	L	10	52	19.2	10	18	55.6	12	32	44	3	9	20	12	30	-2						
1-17	Wesleyan	W	32	57	56.1	8	16	50.0	10	39	49	22	20	13	18	72	109						
1-19	Tusculum	L	14	52	26.9	6	14	42.9	16	31	47	6	7	25	17	34	7						
1-25	Southwestern	W	25	60	41.7	2	0	33.3	20	20	40	10	5	16	13	52	32						
1-26	Corning Academy	W	17	56	30.4	11	19	57.9	13	27	40	8	10	15	9	45	28						
1-28	Longwood	W	30	65	46.2	6	9	66.7	13	40	53	16	10	17	8	66	77						
2- 1	Maryville	W	27	58	46.6	12	14	85.7	14	35	49	15	9	20	11	66	72						
2- 2	Montrose County	L	24	64	37.5	10	21	47.6	11	32	43	7	5	17	12	58	34						
2- 5	Longwood	W	37	77	48.1	0	12	50.0	23	33	56	22	10	13	8	80	84						
2-12	Corning Academy	W	28	71	39.4	11	19	57.9	14	25	39	13	13	18	11	67	49						
2-15	Southwestern	L	25	60	41.7	5	13	38.5	10	28	38	11	3	15	12	55	39						
2-16	Cedarville	W	30	77	39.0	10	16	62.5	26	28	54	14	8	10	20	70	57						

court figures. Numbers for all games played on the featured team's court are italicized. Although not shown in this example, high-game performances for the entire season in each category may be circled and low-game performances may be underlined.

From the design of this chart much supplemental information may be obtained, such as: (1) lowest field goal percentage in a winning effort (28.3% vs. Tusculum on 1.19); (2) most errors in a home game (24 vs. Bismark on 1.14); and (3) most points scored in a loss on the road (58 vs. Corning Academy in the Southern States Athletic Conference Tournament on 2.22). The statistician may wish to have separate charts listing these miscellaneous facts. However, if pressed for time, a chart such as this will enable an individual to obtain such information with minimal effort.

Season-by-Season Statistics

The technique for recording team statistics over the course of many seasons is presented in Table 5.2. This example is similar in format to the previous chart, but the statistical categories of rebound average and total point average have been added due to the nature of the chart. Arranging the records of a team and its opponents in this manner provides a concise method by which various seasons may be compared and information obtained rapidly.

Table 5.2. TEAM AND OPPONENT STATISTICS, SEASON BY SEASON

STATE UNIVERSITY																			
SEASON	GAM	W/L	FGM	FGA	FGM%	FTM	FTA	FTM%	--REBOUNDS--				AST	STE	ERR	FOU	AVG. AVG.		
									OFF	DEF	TOT	AVG.					PTS	PTS.	GER.
1974-75	26	14-12	570	1854	30.7	216	429	50.3	477	691	1168	44.9	372	347	558	377	1356	52.2	27.3
1975-76	23	5-18	459	1534	29.9	156	364	42.9	401	636	1037	45.1	303	258	365	337	1074	46.7	27.1
1976-77	23	10-13	497	1382	36.0	228	401	56.9	363	591	954	41.5	322	224	326	263	1222	53.1	42.4
1977-78	25	13-12	621	1600	38.8	231	460	50.2	505	621	1126	45.0	341	250	501	401	1473	58.9	39.0
1978-79	27	14-13	645	1711	37.7	203	414	49.0	499	599	1098	40.7	364	329	497	458	1493	55.3	37.4
1979-80	24	8-16	510	1517	33.6	150	311	48.2	383	648	1031	43.0	336	229	428	412	1170	48.9	32.8

OPPONENTS																			
SEASON	GAM	W/L	FGM	FGA	FGM%	FTM	FTA	FTM%	--REBOUNDS--				AST	STE	ERR	FOU	AVG. AVG.		
									OFF	DEF	TOT	AVG.					PTS	PTS.	GER.
1974-75	26	12-14	601	1686	35.6	261	474	55.1	521	972	1493	57.4	371	388	492	433	1463	56.3	54.0
1975-76	23	18- 5	554	1586	34.9	185	385	48.1	583	709	1292	56.2	273	256	415	364	1293	56.2	38.4
1976-77	23	13-10	592	1562	37.9	113	210	53.8	471	686	1157	50.3	367	241	350	404	1297	56.4	51.0
1977-78	25	12-13	610	1632	37.4	216	423	51.1	482	618	1100	44.0	401	280	376	364	1436	57.4	45.2
1978-79	27	13-14	651	1686	38.6	198	375	52.8	501	667	1168	43.3	412	347	532	457	1500	55.6	43.8
1979-80	24	16- 8	604	1582	38.2	223	394	56.6	447	733	1180	49.2	287	242	422	371	1433	59.7	46.9

High-Low Performances

Record accomplishments of a team and its opponents in various statistical areas of the game are of particular interest to coaches, statisticians, and fans. This interest applies not only to the best efforts, but to the worst performances as well. The summary given in Table 5.3 is an efficient way to provide this information to the interested individual. Although the example shown here deals with all-time high-low performances, a similar chart could be devised for any single year's activity.

The statistical categories are listed in the left-hand column, followed by the time segment (either half, game, or season), the featured team's performance, and the opponent's figures. Record attainments occurring on the home court of the featured team are indicated by italics and efforts that contributed to a victory by either the featured team or the opponent are noted with an asterisk. Most wins, fewest losses, most consecutive wins, and other miscellaneous seasonal records for the featured team may be included at the bottom of the chart if space permits.

Because the statistics kept for the featured team may be more extensive than those kept for the opposition, gaps may appear on a chart of this type. A notation in the proper area on the sheet to explain the absence is recommended.

Table 5.3. TEAM AND OPPONENT HIGH-LOW PERFORMANCES

CATEGORY	SEGMENT		STATE	OPPONENTS
	HALF	MOST LEAST		
FIELD GOALS MADE	GAME	MOST LEAST	* 21 vs. Cedarville 1-26-77 (1st Half) 3 vs. Tusculum 1-31-76 (2nd Half) * 13 vs. Johnson City 1-30-78 8 vs. Tusculum 1-31-76 645 during the 1978-79 season 459 during the 1975-76 season	* 21 by Wesleyan 1-16-74 (2nd Half) 1 by Culpepper North 1-17-76 (1st Half) * 40 by St. Leo's 11-17-76 5 by Culpepper North 1-17-76 651 during the 1978-79 season 554 during the 1975-76 season
	SEASON	MOST LEAST		
	GAME	MOST LEAST	* 18 vs. Longwood 1-26-78 (1st Half) 13 vs. Wesleyan 1-19-76 (2nd Half) * 106 vs. Athens 2-28-76 29 vs. St. Leo's 11-17-76 1854 during the 1974-75 season 1517 during the 1979-80 season	* 47 by Tusculum 12-1-73 (1st Half) 22 by Southwestern 2-18-80 (2nd Half) * 83 by Father Thomas 11-30-79 52 by Tusculum 1-19-80 1684 during the 1971-72 season 1562 during the 1976-77 season
	SEASON	MOST LEAST		
FIELD GOALS ATTEMPTED	HALF	MOST LEAST	* 44.0 vs. Longwood 1-26-78 (1st Half) 19.0 vs. Tusculum 1-31-76 (2nd Half) 46.6 vs. Wesleyan 2-6-79 14.3 vs. Tusculum 1-31-76 38.8 during the 1977-78 season 29.9 during the 1975-76 season	* 63.6 by Culpepper North 2-22-80 (1st Half) 17.8 by Johnson City 1-14-80 (2nd Half) * 56.1 by Wesleyan 1-17-80 19.2 by Johnson City 1-14-80 38.6 during the 1978-79 season 34.9 during the 1975-76 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
FIELD GOAL PERCENTAGE	HALF	HIGHEST LOWEST	* 28 vs. Johnson City 1-15-79 (1st Half) 0 done on many occasions * 23 vs. Johnson City 1-15-79 0 vs. Culpepper North 2-12-80 251 during the 1968-69 season 115 during the 1964-65 season	14 by Southwestern 2-18-80 (2nd Half) 0 done on many occasions 24 by Southwestern 2-18-80 0 done on many occasions 261 during the 1974-75 season 108 during the 1967-68 season
	GAME	HIGHEST LOWEST		
	SEASON	HIGHEST LOWEST		
	SEASON	HIGHEST LOWEST		
FREE THROWS MADE	HALF	MOST LEAST	* 28 vs. Longwood 1-26-77 (2nd Half) 0 done on many occasions * 34 vs. Longwood 1-26-77 2 vs. Tusculum 2-10-78 460 during the 1977-78 season 248 during the 1964-65 season	* 21 by Culpepper North 2-22-80 (1st Half) 0 done on many occasions 32 by Southwestern 2-18-80 2 by Maplewood 1-4-77 474 during the 1974-75 season 211 during the 1967-68 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
FREE THROW PERCENTAGE	HALF	HIGHEST LOWEST	* 27.2 vs. Roy B. Howell 1-19-76 (1st Half) 0.0 done on many occasions * 42 vs. Culpepper North 2-12-80 0.0 vs. Culpepper North 2-12-80 56.9 during the 1976-77 season 42.9 during the 1975-76 season	* 80.7 by Trinity Academy 12-6-79 (2nd Half) 0.0 done on many occasions * 85.7 by Maplewood 2-1-80 9.1 by Johnson City 1-14-77 63.4 during the 1970-71 season 47.8 during the 1972-73 season
	GAME	HIGHEST LOWEST		
	SEASON	HIGHEST LOWEST		
	SEASON	HIGHEST LOWEST		
OFFENSIVE REBOUNDS	HALF	MOST LEAST	* 27 vs. Longwood 1-26-77 (2nd Half) 2 vs. Gainesville 2-12-77 (1st Half) * 42 vs. Longwood 1-26-77 4 vs. Gainesville 2-12-77 505 during the 1977-78 season 363 during the 1976-77 season	* 20 by Southwestern 12-5-79 (2nd Half) * 4 by Wesleyan 1-17-80 (1st Half) * 37 by Southwestern 12-5-79 10 by Seaside South 2-15-80 583 during the 1975-76 season 447 during the 1979-80 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
DEFENSIVE REBOUNDS	HALF	MOST LEAST	* 23 vs. Johnson City 2-7-78 (2nd Half) 5 vs. Culpepper North 2-7-78 (1st Half) * 42 vs. Johnson City 2-7-78 11 vs. Culpepper North 2-7-78 725 during the 1973-74 season 498 during the 1968-69 season	* 22 by Longwood 1-28-80 (1st Half) * 8 by Seaside South 1-21-80 (1st Half) * 40 by Longwood 1-28-80 * 30 by Seaside South 1-21-80 972 during the 1974-75 season 532 during the 1970-71 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
TOTAL REBOUNDS	HALF	MOST LEAST	* 41 vs. Athens 2-3-77 (2nd Half) 10 vs. Uniondale 12-8-76 (1st Half) * 62 vs. Longwood 1-26-77 22 vs. Uniondale 12-8-76 1168 during the 1974-75 season 870 during the 1968-69 season	* 39 by Southwestern 12-5-79 (2nd Half) 16 by Bismark 11-19-73 (1st Half) * 77 by Southwestern 12-5-79 * 37 by Culpepper North 2-22-79 1493 during the 1974-75 season 987 during the 1970-71 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
ASSISTS	HALF	MOST LEAST	* 14 vs. Longwood 1-26-74 (2nd Half) 0 done on many occasions * 25 vs. Johnson City 1-30-78 0 vs. Roy B. Howell 12-5-77 372 during the 1974-75 season 251 during the 1963-64 season	* 13 by Wesleyan 1-16-74 (1st Half) 0 by Culpepper North 1-17-76 (1st Half) * 28 by St. Leo's 11-17-76 1 by Culpepper North 1-17-76 412 during the 1978-79 season 275 during the 1975-76 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
STEALS	HALF	MOST LEAST	* 17 vs. Athens 2-11-77 (1st Half) 0 vs. Gainesville 1-18-76 (1st Half) * 28 vs. Athens 2-11-77 2 vs. Gainesville 1-18-76 347 during the 1974-75 season 224 during the 1976-77 season	* 15 by Bismark 11-19-73 (2nd Half) 1 by Troy 11-19-73 (1st Half) * 25 by Bismark 11-19-73 5 by Maplewood 2-2-75 388 during the 1974-75 season 241 during the 1976-77 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
ERRORS	HALF	MOST LEAST	* 22 vs. Athens 2-11-77 (1st Half) 2 vs. Culpepper North 2-15-71 (1st Half) * 34 vs. Athens 2-11-77 6 vs. Culpepper North 2-15-71 558 during the 1974-75 season 326 during the 1976-77 season	* 17 by Tusculum 1-31-76 (1st Half) * 4 by St. Leo's 11-17-76 (2nd Half) * 30 by Troy 12-15-72 * 10 by Father Thomas 11-30-79 532 during the 1978-79 season 550 during the 1976-77 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
PERSONAL FOULS	HALF	MOST LEAST	18 vs. Southwestern 12-5-79 (2nd Half) 0 vs. Father Thomas 1-18-76 (1st Half) 29 vs. Southwestern 12-5-79 4 vs. Gainesville 1-16-79 458 during the 1978-79 season 263 during the 1976-77 season	19 by Cedarville 2-26-77 (2nd Half) * 0 by Troy 1-21-76 (1st Half) * 34 by Tusculum 1-31-76 7 by Johnson City 2-7-78 457 during the 1978-79 season 310 during the 1972-73 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
DISQUAL.	HALF	MOST LEAST	4 vs. Southwestern 12-5-79 0 done on many occasions 23 during the 1973-74 season 10 during the 1970-71 season	* 4 vs. Tusculum 1-31-76 0 done on many occasions 25 during the 1972-73 season 11 during the 1968-69 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		
POINTS SCORED	HALF	MOST LEAST	* 49 vs. Cedarville 2-26-77 (1st Half) 8 vs. Wesleyan 1-16-74 (1st Half) * 27 vs. Johnson City 1-30-78 23 vs. Roy B. Howell 1-30-75 1193 during the 1978-79 season 1074 during the 1975-76 season	* 49 by Wesleyan 2-6-79 (1st Half) * 2 by Culpepper North 1-18-76 (1st Half) * 88 by St. Leo's 11-17-76 13 by Culpepper North 1-18-76 1500 during the 1978-79 season 1233 during the 1975-76 season
	GAME	MOST LEAST		
	SEASON	MOST LEAST		
	SEASON	MOST LEAST		

The statistician may wish to substitute per-game averages for absolute totals in the chart opposite seasonal listings since the number of games a team plays varies from season to season. This may make the records more meaningful, especially if the yearly total fluctuates by more than five or six games.

Team and Opponent Combination Records

Interesting insights are gained by developing a chart that shows record combined performances of the featured team and its opponents in selected categories. Table 5.4 gives a suggested format for a chart of this nature. The statistical areas are listed in the left-hand column followed by the time segment. High efforts are given next, followed by low efforts in the right-hand column. Within each block, the total is recorded along with the date of the accomplishment and the breakdown according to the teams involved. As has been the case in previous charts, performances on the featured team's court are italicized.

Statistical Graphs

The utilization of graphs will aid the researcher in the interpretation of basketball statistics. The examples shown here detail two of the simplest and most practical graphs available to the basketball statistician.

Table 5.4. COMBINED TEAM AND OPPONENT HIGH-LOW PERFORMANCES

CATEGORY	SEGMENT	HIGHEST	LOWEST
FIELD GOALS MADE	Half Game Season	40 (State 21, Longwood 19) 1-12-78 (2nd Half) 75 (State 36, Longwood 39) 1-12-78 1417 (State 643, Opponents 774) 1978-79	8 (State 4, Cedarville 4) 2-20-74 (1st Half) 26 (State 14, Harding-Trinity 12) 12- 1-76 1056 (State 521, Opponents 535) 1973-74
FIELD GOALS ATTEMPTED	Half Game Season	72 (State 38, Longwood 34) 1-12-78 (2nd Half) 137 (State 70, Longwood 67) 1-12-78 3103 (State 1440, Opponents 1663) 1978-79	25 (State 10, Cedarville 15) 2-20-74 (1st Half) 62 (State 28, Wesleyan 33) 11-27-75 1875 (State 953, Opponents 922) 1967-68
FIELD GOAL PERCENTAGE	Half Game Season	62.5 (State 72.3, Seaside 51.6) 2-17-76 (1st Half) 56.2 (State 62.0, Seaside 51.0) 2-17-76 48.3 (State 49.1, Opponents 47.3) 1975-76	18.4 (State 27.0, Milligan 10.0) 12-20-73 (1st Half) 24.8 (State 21.6, Uniondale 28.3) 12-13-70 35.0 (State 32.3, Opponents 37.1) 1968-69
FREE THROWS MADE	Half Game Season	25 (State 11, Southwestern 14) 2-18-79 (2nd Half) 42 (State 18, Southwestern 24) 2-18-79 826 (State 420, Opponents 406) 1976-77	0 done on many occasions 4 (State 0, Tusculum 4) 12-13-76 574 (State 278, Opponents 296) 1965-66
FREE THROWS ATTEMPTED	Half Game Season	36 (State 15, Longwood 21) 1-17-77 (1st Half) 60 (State 28, Southwestern 32) 2-18-79 510 (State 274, Opponents 236) 1976-77	0 done on six occasions 6 (State 3, Culpepper North 3) 1- 5-71 294 (State 141, Opponents 153) 1965-66
FREE THROW PERCENTAGE	Half Game Season	100.0 (State 100.0, Culpepper North 100.0) 12- 8-72 (1st Half) 86.0 (State 99.0, Seaside 80.0) 1-31-77 69.2 (State 71.3, Opponents 67.4) 1978-79	0.0 done on many occasions 33.3 (State 33.3, Uniondale 33.3) 12-19-70 47.0 (State 46.1, Opponents 48.0) 1969-70
OFFENSIVE REBOUNDS	Half Game Season	29 (State 14, Longwood 16) 12- 1-79 (1st Half) 57 (State 30, Bismark 27) 12-11-70 947 (State 490, Opponents 457) 1970-71	6 (State 4, Montrose County 2) 2-27-73 (2nd Half) 22 (State 12, Athens 10) 1-15-75 793 (State 377, Opponents 416) 1975-76
DEFENSIVE REBOUNDS	Half Game Season	31 (State 16, Longwood 16) 12- 1-79 (1st Half) 57 (State 29, Bismark 28) 12-11-70 1621 (State 839, Opponents 782) 1978-79	14 (State 8, Montrose County 6) 2-27-73 (2nd Half) 29 (State 16, Athens 14) 1-15-75 1340 (State 653, Opponents 687) 1967-68
TOTAL REBOUNDS	Half Game Season	60 (State 29, Longwood 31) 12- 1-79 (1st Half) 115 (State 56, Longwood 60) 12- 1-79 2501 (State 1215, Opponents 1286) 1976-77	22 (State 12, Montrose County 9) 2-27-73 (2nd Half) 51 (State 27, Athens 24) 1-15-75 2172 (State 1101, Opponents 1071) 1975-76
ASSISTS	Half Game Season	16 (State 10, Maplewood 6) 12-21-74 (2nd Half) 29 (State 17, Maryville 12) 1-13-70 727 (State 354, Opponents 373) 1977-78	3 (State 0, Tusculum 3) 2- 6-75 (1st Half) 10 (State 3, Tusculum 7) 2- 6-75 504 (State 222, Opponents 282) 1971-72
STEALS	Half Game Season	18 (State 13, Wesleyan 6) 1-12-69 (2nd Half) 33 (State 22, Wesleyan 11) 1-12-69 523 (State 273, Opponents 255) 1978-79	1 (State 1, Bismark 0) 11-27-76 (1st Half) 6 (State 2, Seaside 4) 2-16-77 379 (State 171, Opponents 208) 1970-71
ERRORS	Half Game Season	29 (State 17, Athens 12) 1-10-74 (1st Half) 46 (State 26, Athens 20) 1-10-74 1022 (State 524, Opponents 498) 1967-68	7 (State 4, Southwestern 3) 12-15-71 (2nd Half) 17 (State 8, Southwestern 9) 12-15-71 847 (State 450, Opponents 397) 1976-77
PERSONAL FOULS	Half Game Season	31 (State 20, Wesleyan 11) 2- 8-70 (2nd Half) 58 (State 33, Wesleyan 25) 2- 8-70 892 (State 522, Opponents 477) 1974-75	5 (State 4, Seaside 1) 1-27-79 (1st Half) 17 (State 6, Culpepper North 11) 12-10-69 764 (State 381, Opponents 383) 1965-66
DISQUAL.	Game Season	7 (State 4, Harding Trinity 3) 11-24-78 39 (State 22, Opponents 17) 1972-73	0 done on many occasions 25 (State 15, Opponents 12) 1977-78
POINTS SCORED	Half Game Season	100 (State 53, Tusculum 47) 2- 1-76 (2nd Half) 181 (State 97, Tusculum 84) 2- 1-76 2861 (State 1512, Opponents 1349) 1971-72	21 (State 9, Cedarville 12) 1-30-71 (1st Half) 60 (State 32, Uniondale 28) 12- 6-73 2312 (State 1200, Opponents 1112) 1968-69

Statistical progression graphs are presented in Figures 5.1 and 5.2. In Figure 5.1, field goal percentage for a team over the course of a season is charted game-by-game. In Figure 5.2, field goal percentage is charted on a year-to-year basis. In both instances, field goal percentage is recorded on the vertical axis and the time frame (either game sequence or years) is recorded on the horizontal axis. Although only one category is shown in this example, there is no limit to the number of different statistical areas that may be included on the vertical axis.

The graphs presented in Figures 5.3 and 5.4 examine statistical relationships. The categories of points scored and field goal percentage have been placed on each chart, one on each axis.

The points in Figure 5.3 represent each game of a particular season and are placed at the appropriate intersection for the total points and field goal percentage of that contest. The number appearing by each point represents that game's place in the sequence of games played in that season. Line A has been drawn to indicate where an identical relationship occurs between the two variables. For example, in the tenth game of the season, the featured team shot 23% from the field and scored a total of 32 points. In the 20th game of the season, the team shot 34% from the field and scored a total of 34 points. Because the totals were the same for the 20th game, it has been plotted on

Figure 5.1, STATISTICAL PROGRESSION GRAPH, GAME-BY-GAME

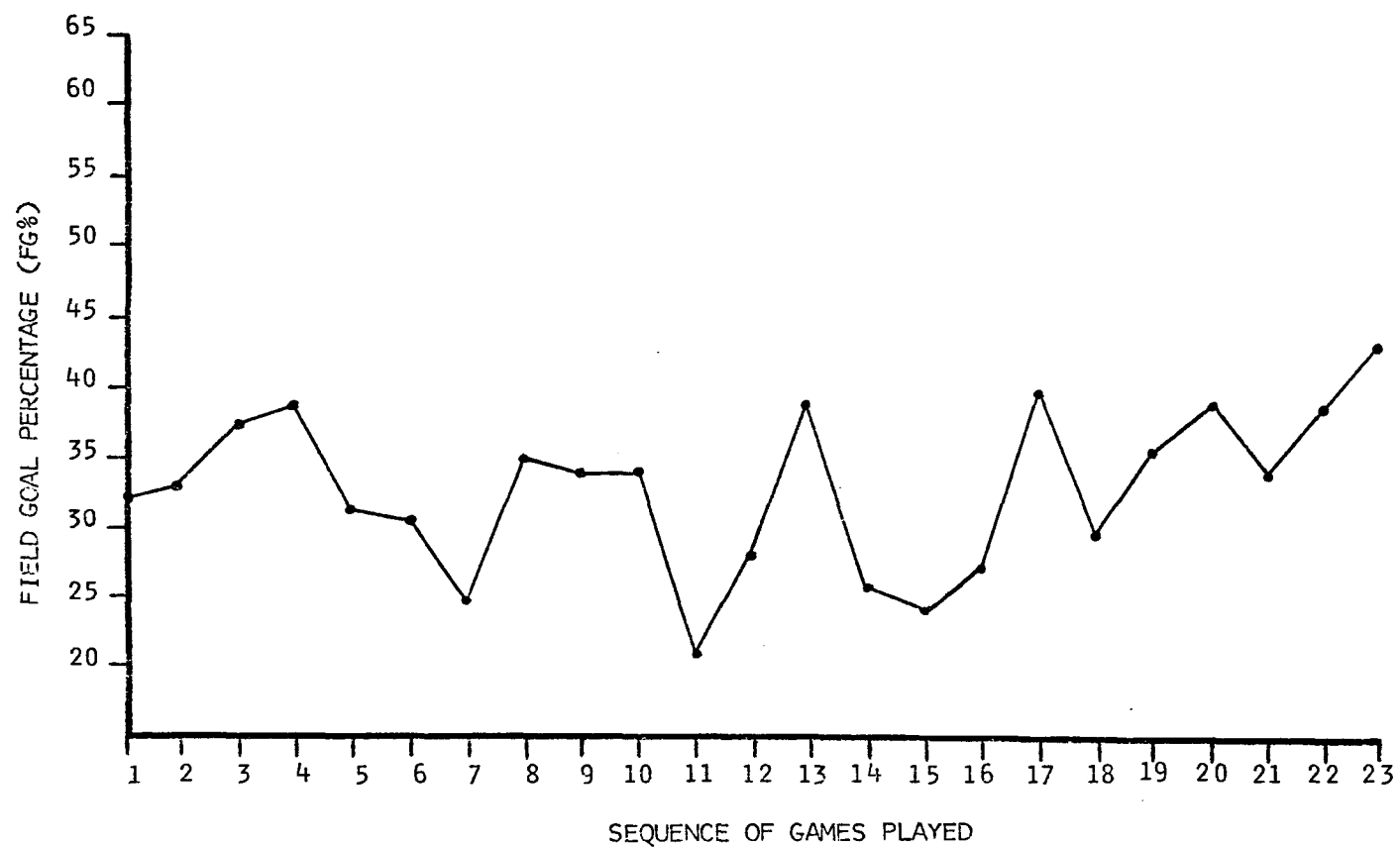


Figure 5.2. STATISTICAL PROGRESSION GRAPH, SEASON-BY-SEASON

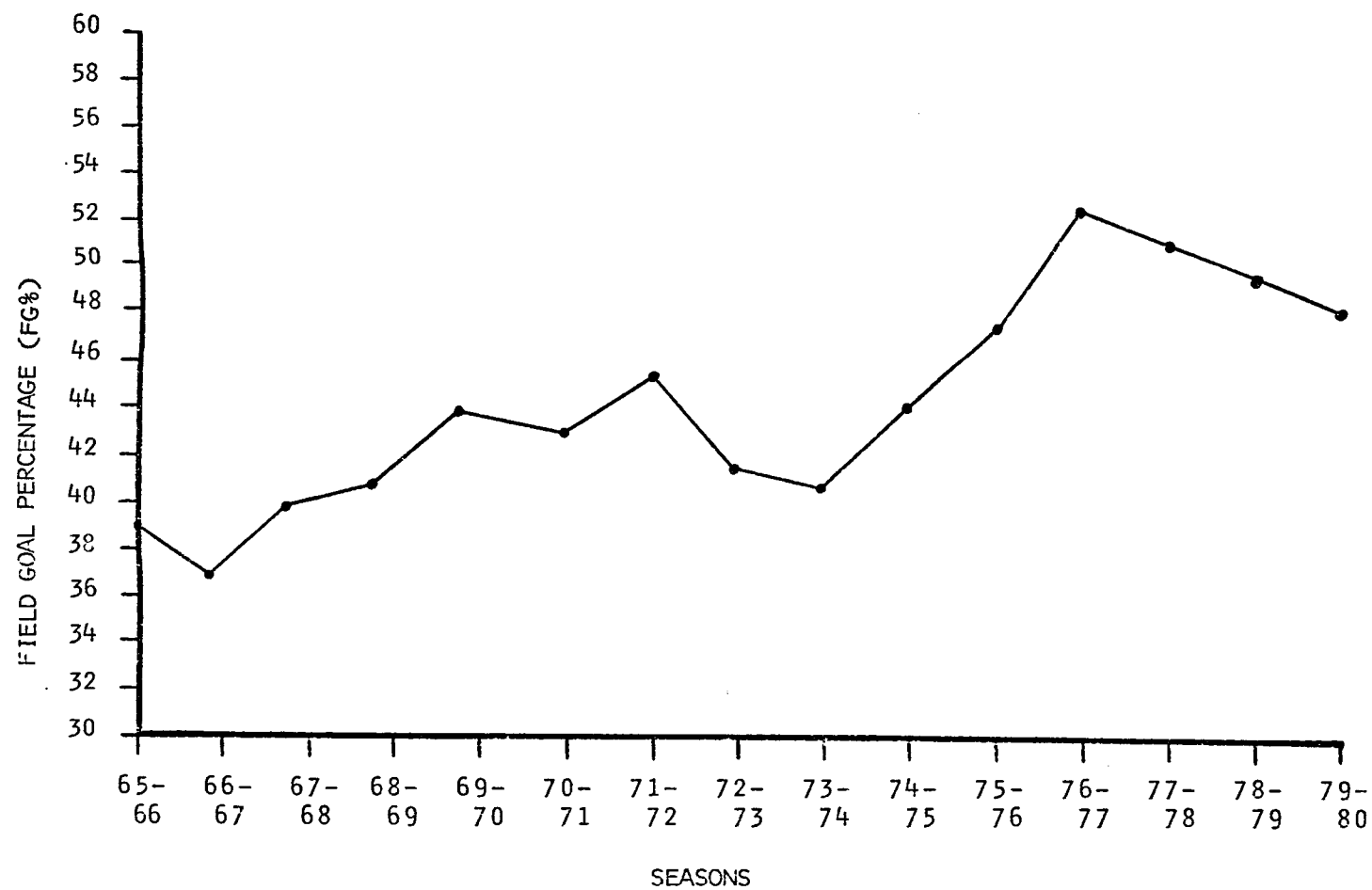
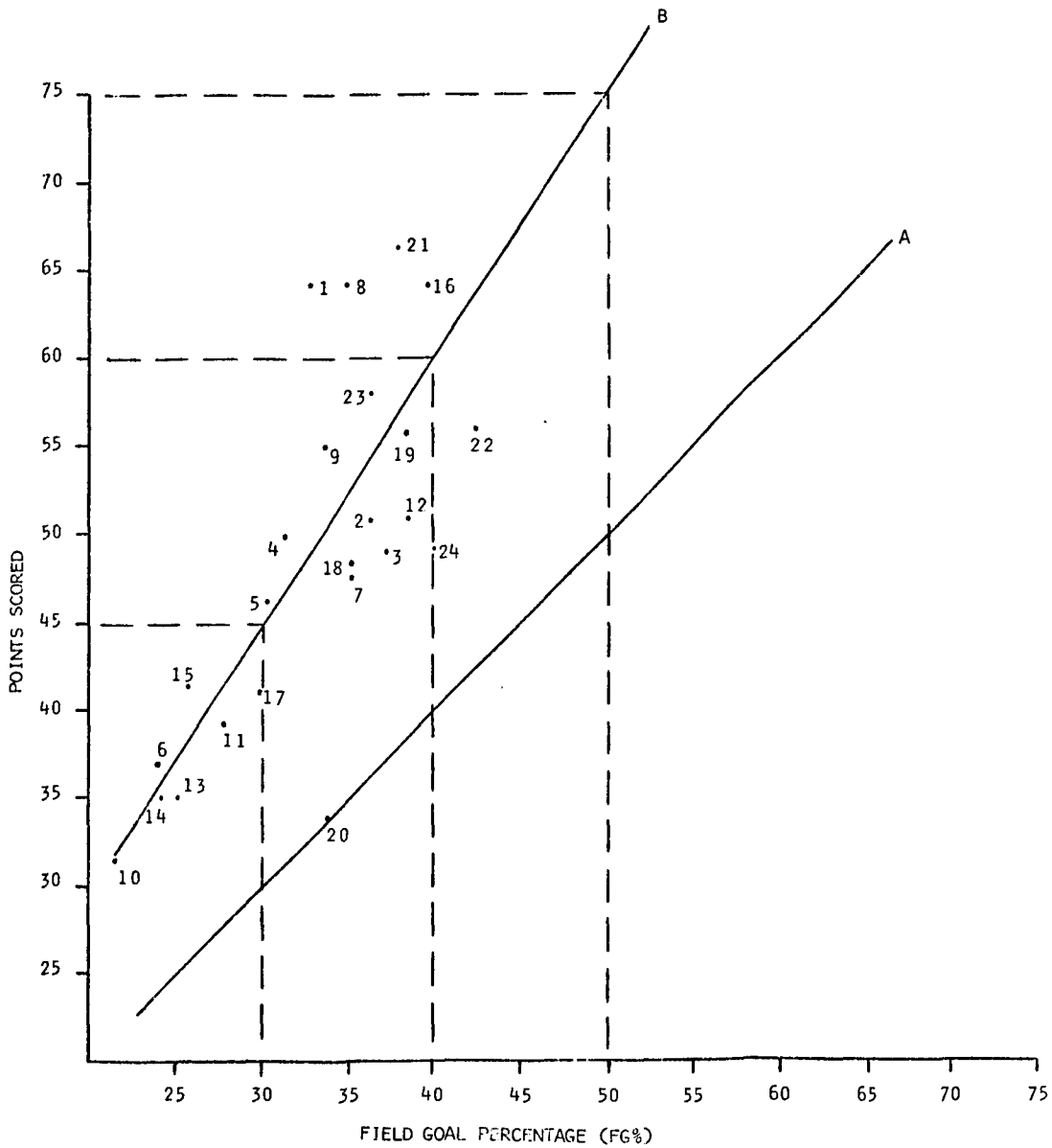


Figure 5.3. STATISTICAL RELATIONSHIP GRAPH, GAME-BY-GAME



Line A. This is the only game in Figure 5.3 that shows an identical relationship between the variables.

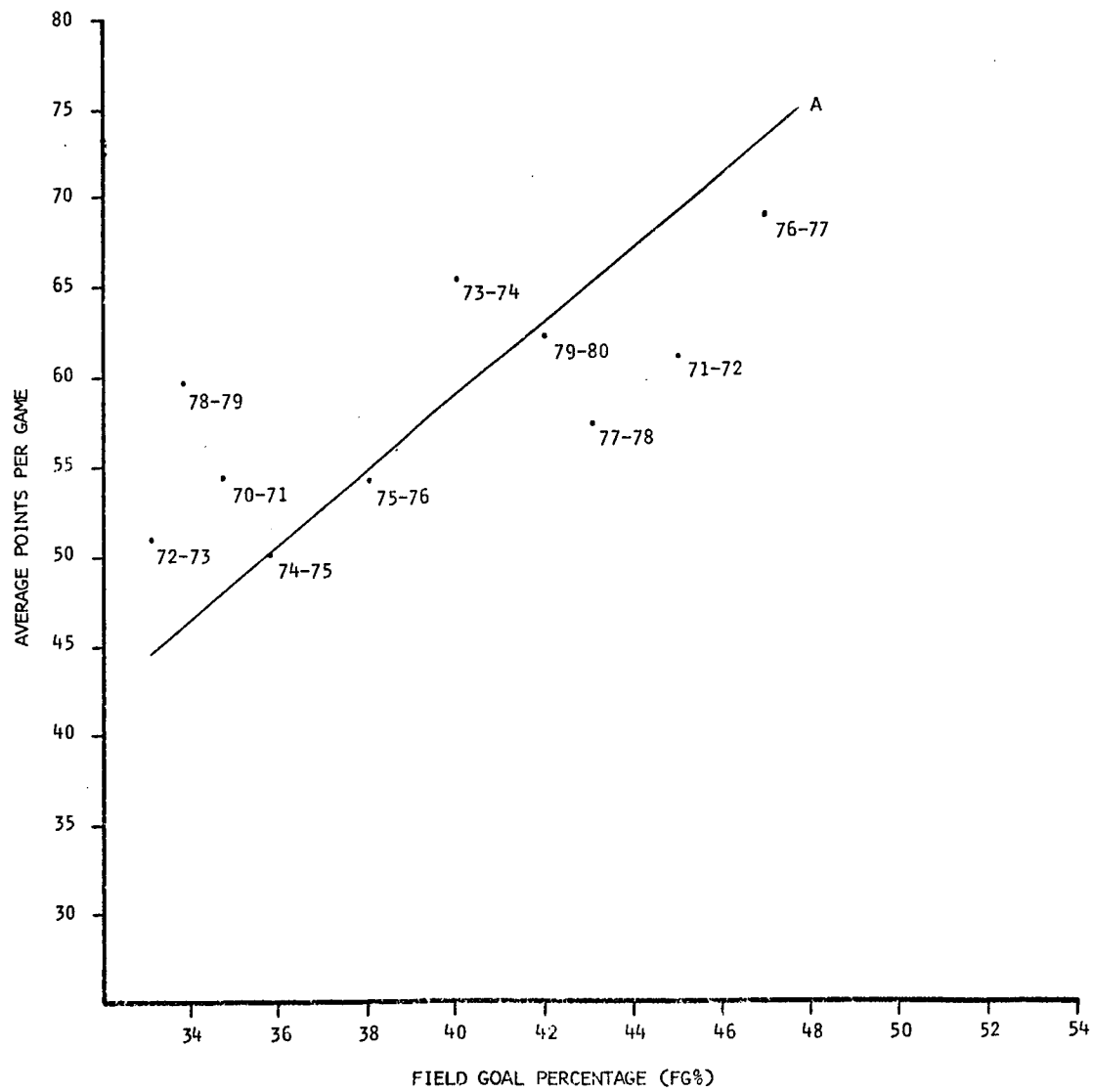
Line B represents a much closer relationship between the two categories. The writer plotted Line B by multiplying the field goal percentage by 1.5 to yield total points scored. Although this is an arbitrary formula, its use in this example justifies the theory behind it. For instance, a team that shot 30% from the field would expect to score 45 points. Figure 5.3 indicates that, in the fifth game of the season, the featured team shot 31% from the field and scored 46 points.

The direction in which Lines A and B are drawn indicates a positive correlation between the two categories--the higher the field goal percentage, the more points scored. A line extending from the upper left corner of the graph to the lower right corner would indicate a negative correlation.

The graph in Figure 5.4 is identical to the previous chart with the exception that the points represent entire seasons rather than specific games. Beginning from an arbitrary base of 43 total points and 32% field goal shooting, Line A represents a single-unit increase in field goal percentage for each two-unit increase in total points.

Graphs similar to those shown in Figures 5.3 and 5.4 may be used whenever the researcher feels a relationship exists between any pair of basketball records. Some

Figure 5.4. STATISCAL RELATIONSHIP GRAPH, SEASON-BY-SEASON



suggested combinations include: points/errors, rebounds/points, assists/field goals made, steals/personal fouls, and offensive rebounds/free throws attempted. The researcher should remember that when the categories are changed the relationship lines will shift as well.

The use of progression graphs and relationship graphs will allow consistencies and inconsistencies regarding team performance to become clearer. A coach will be able to focus on a particular game or season and determine the causes of the variations.

Summary

Unless team records are kept accurately, an objective comparison of squads over the history of a program will not be possible. For this reason, a variety of charts has been presented in this chapter in order to present a wide spectrum of statistical information.

Chapter 6

MISCELLANEOUS STATISTICS

The pre-season media guide and the post-season statistical yearbook should serve the same main purpose--to provide as much pertinent information as possible to the public concerning a particular team. Although there are minor differences between the two--the former deals with subjective preparation while the latter deals with objective reporting--each includes standard information such as rosters, schedules, player profiles, general information concerning the school or program, and statistical information selected from the examples presented in the previous two chapters. However, there are additional areas, not previously cited in this manual, that could be included to make media guides and statistical yearbooks more informative and useful.

Box Scores

Including box scores of the previous season's games are excellent additions to publications relating to the basketball program. A decision can be made whether to include all games or only the most important contests.

The example given in Table 6.1 suggests which statistics can be included and how the box can be arranged to be space-efficient. Standard procedure is to list the five starters first for each squad. The score by halves is given at the bottom of the box along with the won-lost record of each club. Referee names and game attendance are optional inclusions.

Newspaper Clippings

Reproduced newspaper articles are valuable sources of information. Both game previews and game summaries may be included, either for all contests or only for those with the greatest influence on the squad's season.

Because of the length of many of the articles, some editing may be necessary to conserve space. An alternative to reproducing the entire story is to include only the headlines of various articles concerning the team.

Yearly Scores

The listing of yearly scores provides an effective view, in capsule form, of the basketball history of a particular program. As seen in Table 6.2, the score of the featured team is listed first, followed by the opponent, and the opponent's score. An "at" before the opponent's name indicates an away game for the featured team. Tournament games may be indicated by an asterisk or similar symbol.

Table 6.1. BOX SCORE

Maryville at STATEDecember 14, 1979

		STATE										
NO	PLAYER	TIME	FGM	FGA	FTM	FTA	REB-OFF	AST	STE	ERR	FOU	PTS
14	Gregory	27:04	5	8	0	0	3- 1	0	0	1	0	10
24	Martin	32:07	5	9	0	1	4- 2	0	2	3	2	10
44	Kidd	26:50	2	9	2	4	5- 2	2	2	1	4	6
54	Bernstein	34:57	8	22	3	10	12- 5	1	2	6	1	19
52	Alexander	33:32	0	4	0	0	3- 1	9	3	3	3	0
10	Wright	1:24	0	0	0	0	0- 0	0	0	0	0	0
22	Simpson	9:53	0	0	0	0	0- 0	0	0	0	1	0
12	Knight	5:18	1	1	0	0	0- 0	2	0	0	1	2
34	Evans	7:01	0	1	0	0	0- 0	0	0	0	0	0
32	Walters	20:30	0	5	1	2	4- 2	0	0	2	1	1
40	Keele	1:24	0	0	0	0	0- 0	0	0	0	0	0
	team						2- 1					
	TOTALS		21	59	6	17	33-14	14	9	16	13	48

DEAD BALL REBOUNDS - 6

		MARYVILLE										
NO	PLAYER	TIME	FGM	FGA	FTM	FTA	REB-OFF	AST	STE	ERR	FOU	PTS
11	Chapman	17:13	2	13	1	2	6- 5	0	2	0	0	5
23	Williamson	25:26	4	9	0	0	9- 4	0	3	1	4	8
51	Weaver	24:25	9	14	1	2	5- 1	3	3	5	3	19
31	Babb	21:17	7	14	0	0	6- 2	0	0	2	2	14
41	York	10:34	0	1	0	0	3- 2	0	1	0	1	0
13	Hamilton	11:59	1	1	0	0	0- 0	0	1	1	0	2
55	Moffett	13:09	0	1	0	0	0- 0	0	2	1	0	0
33	Watson	16:05	0	2	0	0	4- 2	4	2	0	0	0
45	Thorpe	19:23	4	8	0	0	7- 4	6	2	6	2	8
43	Murphy	23:55	5	10	0	1	8- 2	3	1	2	0	10
21	Rodgers	16:34	1	5	0	0	5- 3	0	0	0	0	2
	team						4- 3					
	TOTALS		33	78	2	5	57-28	16	17	18	12	68

DEAD BALL REBOUNDS - 1

(1-5) STATE 21 27 - 48
 (3-3) MARYVILLE 32 36 - 68

Referees: Tommy Hargis and Lou Stroop. Attendance: 750.

Table 6.2. SCORES YEAR-BY-YEAR

1976-77

40	UNIONDALE	48
29	WESLEYAN	68
41	CORNING ACADEMY	16
41	ROY B. HOWELL	61
31	at Tusculum	74
37	TROY	54
40	at Corning Academy	25
30	FATHER THOMAS	52
32	at Wesleyan	61
33	SEASIDE SOUTH	36
32	at Montrose County	57
25	TUSCULUM	37
40	at Father Thomas	62
43	at Uniondale	58
41	at New Haven Catholic	60
68	* Cedarwood Central	47
46	* Maplewood	35
64	* Athens	34

* Maplewood Invitational Tournament

Final Overall Record: 5 - 13
 Home Record: 1 - 7
 Road Record: 1 - 6
 Neutral Court Record: 3 - 0

HEAD COACH: Brian Underwood
 ASSISTANTS: Tom Beckman, James Dunleavy
 MANAGERS: Leigh Wheeler, Bill Zeller

LETTERWINNERS: Whit Morgan, Jimmy Ledford,
 Donald Eldridge, Bill Toms, Ed Sims,
 Brian DeLong, Roy Alsup, Bob Harding

LEADING SCORER: Jimmy Ledford, 360 (20.0 avg.)
 LEADING REBOUNDER: Ed Sims, 198 (11.0 avg.)
 LEADING FREE THROW %: Bill Toms, 82.4%

Additional information may be included at the end of each year's listing such as the team's final overall, home, away, and neutral court won-lost record; names of coaches, managers, and letterwinners; and leaders in various statistical categories.

Won-Lost Records vs. Opponents

At the conclusion of the seasonal listing of scores, a chart may be included showing the team's record against each opponent played since the inception of the program. The illustration given in Table 6.3 lists the rivals in alphabetical order and gives overall, home, away, and neutral court records. Specific records may be either circled in the chart itself or documented in a separate section as is shown here.

Yearly Listing of Individual and Team Honors

In Table 6.4, a method is shown by which honors won by individual players and the team may be easily categorized according to seasons. Within each year's block, individual awards such as team Most Valuable Player (MVP.), team Most Improved Player (MIP.), conference All-Star selection, and All-Tournament choices are listed. Under the team honor section, achievements such as high tournament finishes and outstanding statistical performances can be noted and detailed.

Table 6.3. WON-LOST RECORDS VS. OPPONENTS

----- WON-LOST RECORDS -----				
OPPONENT	HOME	AWAY	NEUTRAL	OVERALL
Athens	5- 4 .556	5- 5 .500	0- 0 .000	10- 9 .526
Bismark	3- 1 .333	3- 1 .333	0- 0 .000	6- 2 .750
Cedarwood Central	0- 0 .000	0- 0 .000	0- 1 .000	0- 1 .000
Cedarville	7- 7 .500	7- 7 .500	0- 2 .000	14-16 .467
Corning Academy	2- 1 .667	0- 4 .000	0- 0 .000	2- 5 .286
Culpepper North	7- 1 .875	6- 1 .859	2- 1 .667	15- 3 .833
Culpepper South	3- 6 .333	2- 6 .250	0- 0 .000	5-12 .294
Father Thomas	1- 1 .500	1- 1 .500	0- 0 .000	2- 2 .500
Gainsville	5- 9 .357	2-10 .167	0- 0 .000	7-19 .269
Harding-Trinity	1- 1 .500	0- 0 .000	0- 0 .000	1- 1 .500
Johnson City	4- 2 .667	2- 4 .333	0- 0 .000	6- 6 .500
Longwood	9- 9 .500	10-13 .435	2- 4 .333	21-26 .447
Maryville	3- 1 .750	0- 1 .000	1- 1 .500	4- 3 .571
Maplewood	12- 5 .706	4-15 .210	0- 0 .000	16-20 .444
Montrose County	7- 1 .875	1- 4 .200	0- 0 .000	8- 5 .615
New Haven Catholic	0- 3 .000	3- 3 .500	0- 0 .000	3- 6 .333
North Bradford	10- 2 .833	8- 2 .800	0- 0 .000	18- 4 .818
Roy B. Howell	5- 5 .500	5- 5 .500	0- 0 .000	10-10 .500
St. Leo's	6- 6 .500	3- 7 .300	0- 1 .000	9-14 .391
Seaside South	1- 1 .500	2- 1 .667	0- 0 .000	3- 2 .600
Southwestern	10- 7 .529	6- 9 .400	0- 0 .000	16-16 .500
Troy	6- 1 .857	1- 4 .200	0- 0 .000	7- 5 .583
Tusculum	2- 1 .667	1- 2 .333	1- 1 .500	4- 4 .500
Uniondale	14- 1 .933	12- 6 .667	4- 1 .800	30- 8 .789
Wesleyan	0- 6 .000	0- 3 .000	0- 1 .000	0-10 .000
TOTALS	123-82 .600	84-114 .424	10-13 .435	217-209 .509

MOST GAMES PLAYED VS. AN OPPONENT-

HOME: 18 vs. Longwood

NEUTRAL: 6 vs. Longwood

AWAY: 23 vs. Longwood

OVERALL: 47 vs. Longwood

MOST WINS VS. AN OPPONENT-

HOME: 14 vs. Uniondale

NEUTRAL: 4 vs. Uniondale

AWAY: 12 vs. Uniondale

OVERALL: 30 vs. Uniondale

FEWEST WINS VS. AN OPPONENT-

HOME: 0 vs. three teams

NEUTRAL: 0 vs. four teams

AWAY: 0 vs. three teams

OVERALL: 0 vs. Ced. Cen., Wesl.

MOST LOSSES VS. AN OPPONENT-

HOME: 9 vs. Gainsville, Long.

NEUTRAL: 4 vs. Longwood

AWAY: 15 vs. Maplewood

OVERALL: 26 vs. Longwood

FEWEST LOSSES VS. AN OPPONENT-

HOME: 1 vs. eleven teams

NEUTRAL: 1 vs. seven teams

AWAY: 1 vs. five teams

OVERALL: 1 vs. Ced. Cen., H-T

Table 6.4. SEASONAL LISTINGS OF INDIVIDUAL AND TEAM HONORS

1973-74

INDIVIDUAL

TEAM'S MOST VALUABLE PLAYER - Doug Cox
 TEAM'S MOST IMPROVED PLAYER - Mike Gamble
 MAPLEWOOD INVITATIONAL ALL TOURNAMENT TEAM - Doug Cox
 S. S. A. C. FIRST TEAM - Doug Cox
 S. S. A. C. SECOND TEAM - Bill Holiday, Ron Horner

TEAM

MAPLEWOOD INVITATIONAL TOURNAMENT - Champions
 S. S. A. C. - Regular Season Second Place
 S. S. A. C. - Tournament Champions

1974-75

INDIVIDUAL

TEAM'S MOST VALUABLE PLAYER - Don Garren
 TEAM'S MOST IMPROVED PLAYER - Ron Horner
 S. S. A. C. FIRST TEAM - Edsell Walker
 S. S. A. C. ALL TOURNAMENT TEAM - Kelly Yeager
 DISTRICT 5 HONORABLE MENTION - Edsell Walker

TEAM

S. S. A. C. - Tournament Champions
 S. S. A. C. - Top Defensive Team

1975-76

INDIVIDUAL

TEAM'S MOST VALUABLE PLAYER - Edsell Walker
 TEAM'S MOST IMPROVED PLAYER - Jimmy Bilford
 S. S. A. C. SECOND TEAM - Edsell Walker, Mark James, Lou Pickford
 DISTRICT 5 SECOND TEAM - Edsell Walker

TEAM

MAPLEWOOD INVITATIONAL TOURNAMENT - Second Place

Final Conference and National Statistics

By including the statistics of a conference and national organizations of which the school is a member, superior accomplishments by individual players and the team may be highlighted and a frame of reference provided to compare all records of the team. Table 6.5 shows what may be included on a chart of this type.

Four categories dealing with individual statistics (scoring, rebounding, assists, and free throws) and four categories dealing with team statistics (offensive scoring average, defensive scoring average, field goal percentage, and free throw percentage) are included with the top five totals listed under each. Capital letters are used to designate the featured team or a player from that team. Final standings are given to note each team's conference and overall won-lost record.

Coaches' Won-Lost Records

Table 6.6 is suggested as a concise method by which to organize the won-lost results of each head coach that has served in the basketball program. The individual's name and the seasons spanned as coach are recorded on the first line. Each season's final record and the names of all assistant coaches are listed with the final totals appearing at the bottom. Asterisks are used to designate milestones.

Table 6.5. FINAL CONFERENCE AND NATIONAL STATISTICS

<u>INDIVIDUAL</u>									
<u>-SCORING-</u>					<u>-REBOUNDING-</u>				
<u>NAME</u>	<u>SCHOOL</u>	<u>GAM</u>	<u>PTS</u>	<u>AVG.</u>	<u>NAME</u>	<u>SCHOOL</u>	<u>GAM</u>	<u>REB</u>	<u>AVG.</u>
Hall	Tusculum	23	421	18.3	Bandy	Wesleyan	26	322	12.4
SMITH	STATE	22	400	18.2	ROWEN	STATE	25	302	12.1
Brown	Longwood	24	427	17.8	Vanetta	Tusculum	23	271	11.8
Bridges	Culpepper North	23	396	17.2	Solomon	St. Leo's	25	290	11.6
Vanetta	Tusculum	23	394	17.1	ARMSTRONG	STATE	24	266	11.1
<u>-ASSISTS-</u>					<u>-FREE THROWS-</u>				
<u>NAME</u>	<u>SCHOOL</u>	<u>GAM</u>	<u>AST</u>	<u>AVG.</u>	<u>NAME</u>	<u>SCHOOL</u>	<u>FGM</u>	<u>FGA</u>	<u>FGM%</u>
Moore	Athens	25	252	10.5	Moore	Athens	45	63	71.4
McReynolds	Cedarville	22	207	9.4	COMPTON	STATE	61	86	70.9
Wheatley	St. Leo's	24	216	9.0	BENICK	STATE	34	48	70.8
Anderson	Bismark	20	170	8.5	Vanetta	Tusculum	42	60	70.0
Neeley	Culpepper North	27	219	8.1	Russell	Bismark	32	49	65.3

<u>TEAM</u>									
<u>-OFFENSIVE AVERAGE-</u>					<u>-DEFENSIVE AVERAGE-</u>				
<u>SCHOOL</u>	<u>GAM</u>	<u>PTS</u>	<u>AVG.</u>		<u>SCHOOL</u>	<u>GAM</u>	<u>PTS</u>	<u>AVG.</u>	
Tusculum	23	1571	68.3		Longwood	27	1515	56.1	
St. Leo's	26	1726	66.4		Southwestern	23	1313	57.1	
Wesleyan	27	1763	65.3		Cedarville	24	1578	57.4	
Bismark	20	1264	63.2		St. Leo's	26	1511	58.1	
STATE	25	1578	63.1		STATE	25	1455	58.6	
<u>-FIELD GOAL PERCENTAGE-</u>					<u>-FREE THROW PERCENTAGE-</u>				
<u>SCHOOL</u>	<u>FGM</u>	<u>FGA</u>	<u>FGM%</u>		<u>SCHOOL</u>	<u>FIM</u>	<u>FTA</u>	<u>FTM%</u>	
STATE	654	1258	52.0		STATE	270	374	72.2	
Culpepper North	626	1211	51.7		Tusculum	281	400	70.3	
Cedarville	492	961	51.2		Bismark	284	421	67.4	
Tusculum	645	1282	50.3		Wesleyan	266	396	67.2	
Harding-Trinity	564	1134	49.7		Montrose County	257	385	66.7	

FINAL STANDINGS

	<u>CONFERENCE</u>			<u>OVERALL</u>		
Tusculum	10-	2	.833	17-	6	.739
St. Leo's	9-	3	.750	19-	7	.731
STATE	9-	3	.750	16-	9	.640
Longwood	8-	4	.667	17-10		.630
Wesleyan	7-	5	.583	16-11		.593
Athens	6-	6	.500	12-13		.480
Southwestern	6-	6	.500	13-10		.565
Bismark	5-	7	.417	9-11		.450
Cedarville	4-	8	.333	12-12		.500
Harding-Trinity	4-	8	.333	11-15		.423
Culpepper North	3-	9	.250	12-15		.414
Montrose County	1-11		.083	5-19		.208

Table 6.6. COACHES WON-LOST RECORDS

BILL LUCAS (1959-60 thru 1967-68)

	<u>W</u>	<u>L</u>	<u>PCT.</u>	<u>ASSISTANTS</u>
1959-60	15	8	.652	Drew Simpson, Alan Beasley
1960-61*	18	6	.750	" "
1961-62	16	10	.615	William Ogle, "
1962-63	13	12	.520	" "
1963-64	10	12	.455	" , Vince Montana
1964-65	11	17	.393	Jim Thomas, Bill Gainer
1965-66	8	19	.296	" "
1966-67	14	14	.500	" "
1967-68	9	17	.323	" "
9 YEARS	114	115	.498	

* Central Conference Regular Season Champions

JIM THOMAS (1968-69 thru 1972-73)

	<u>W</u>	<u>L</u>	<u>PCT.</u>	<u>ASSISTANTS</u>
1968-69	9	15	.375	Bill Gainer, Mike Goodwin
1969-70	15	12	.556	" "
1970-71	10	13	.435	" "
1971-72	14	12	.538	" , Jim Dickey
1972-73	7	17	.292	" "
5 YEARS	55	69	.444	

JOE BECKLEY (1973-74 thru the present)

	<u>W</u>	<u>L</u>	<u>PCT.</u>	<u>ASSISTANTS</u>
1973-74	14	14	.500	Larry Reager, Alvin Nelson
1974-75*	19	8	.704	" "
1975-76	18	12	.600	" "
1976-77**	17	8	.680	Thomas White, Mike Dooley
1977-78	15	11	.577	" "
1978-79	16	9	.640	Stu Waters, "
1979-80	15	13	.536	" , Johnny Larson
7 YEARS	114	75	.603	

* Tri-State Conference Champions
 Tri-State Conference Coach-of-the-Year
 District 5 Tournament Champions

** Tri-State Conference Champions
 Glenwood Invitational Tournament Champions

Summary

The media guide is a major avenue by which information is dispersed to the general public. Records included in such a publication should be accurate, and should reflect the quality of the basketball program. By utilizing the suggestions presented in this chapter, the statistician will improve the functionality and appearance of this guide.

Chapter 7

SELF-EVALUATION

The questions and exercises included in this chapter are presented to enable the student to conduct a self-evaluation concerning the comprehension of statistical concepts. It is hoped that areas of record-keeping in which the student is weak will be revealed so that improvement may be realized.

Much of the information contained in this section has been taken from the National Collegiate Athletic Association's 1980 Basketball Statisticians' Manual. The questions are divided into categorical headings so that the student may choose specific topics of study. The answers for all of the questions are located at the end of the chapter.

Work on this chapter should not be initiated until the student has concluded an in-depth study and gained a reasonable understanding of the concepts outlined in the previous chapters of this manual. The objective questions that follow have been taken from the concepts presented in Chapter 2, while the statistical computations have been taken from the remaining chapters.

Questions

General Statistical Concepts

If the statement is true, place a T in the blank. If the statement is false, place an F in the blank.

- ___ 1. Tip-ups count as field goal attempts if the player had sufficient control of the ball.
- ___ 2. Blocked shots count as field goal attempts charged to the shooter regardless of whether the ball was in flight before being blocked.
- ___ 3. When a player is fouled in the act of shooting and the shot is successful, a field goal attempt must be charged.
- ___ 4. When a player shoots and is fouled after the ball is in flight, a field goal attempt is charged only if the shot is successful.
- ___ 5. A free throw attempt is charged and a free throw made is credited if the shot is successful and there is a violation by the defense.
- ___ 6. A player should not be charged with a free throw attempt if the shot is unsuccessful due to the illegal actions of that player's teammates or the opponents.
- ___ 7. When a shot by a player from Team A is last touched by a player from Team B before a goal is scored in Team A's basket, the two points should be awarded to the nearest player from Team A.
- ___ 8. When a player from Team B deflects an apparently unsuccessful attempt by a player from Team A into Team A's basket, Team A should be credited with a dead-ball rebound.
- ___ 9. If a player from Team B was in control of the ball before scoring in Team A's basket, no field goal attempt should be charged or field goal made credited to either team, and the player from Team B should be charged with an error.
- ___ 10. There can be no team rebound unless the ball has gone out-of-bounds without a player first earning an individual rebound.

- ___ 11. The statistician should always consider what might have happened when deciding whether to credit a player with an individual rebound.
- ___ 12. Dead-ball rebounds should reflect team rebounding ability.
- ___ 13. If there is doubt about player control when awarding individual rebounds, the statistician may assume there was control.
- ___ 14. A dead-ball rebound is credited to the non-shooting team if time expires while the ball is in the air.
- ___ 15. If no single player can be judged primarily responsible for an error, the team should be charged with the error.
- ___ 16. A team must have the ball before it may be charged with an error.
- ___ 17. An error may be charged to the defensive team as well as to the offensive team.
- ___ 18. Only one assist should be credited for each field goal made.
- ___ 19. The assist must be awarded on the last pass before the successful field goal.
- ___ 20. The type of shot made, or the number of dribbles taken by the shooter will determine whether an assist should be awarded.

Assists

Place a check in the blank if an assist should be awarded for that particular situation.

- ___ 1. Adams passes to Allen, who is well-guarded and breaking for the basket. After receiving the pass, Allen makes a move to get free, shoots, and scores.
- ___ 2. Adams throws a long inbounds pass to Allen. Allen shoots and scores.
- ___ 3. Adams dribbles to the free throw line and draws the defense close. Adams then passes to Allen, who is open, for the basket.

- 4. Adams passes to Allen in a situation that would normally warrant an assist, but a field goal does not result because Allen is fouled in the act of shooting.
- 5. Adam's pass to Allen, who is alone and breaking for the basket, results in a score.
- 6. In the process of passing the ball around the defense looking for an opening, Adams passes to Allen, who shoots and scores.
- 7. Adams passes to Allen, who is well-guarded and breaking for the basket. The pass gives Allen an advantage to shoot and score.
- 8. Adams passes to Allen, who turns and scores on a fall-away jump shot.
- 9. Adams throws a lob pass to Allen. Allen catches the ball, shoots while still in mid-air, and scores.
- 10. Adams passes to Allen in a situation that would normally warrant an assist, but a field goal is not produced because Allen travels, fumbles the pass out-of-bounds, or has the shot blocked.
- 11. Adams passes to Allen. In the same motion with which the pass is received, Allen shoots a successful hook shot.
- 12. After a defensive rebound, Adams throws a long outlet pass to Allen. Allen shoots and scores.
- 13. Adams jumps to either shoot or pass the ball. The ball slips out of Adams' hands and is caught by Allen, who is wide open. Allen shoots and scores.
- 14. Adams passes to Allen, who is 20 feet from the basket and totally unguarded. Allen immediately shoots and scores.
- 15. Adams dribbles to the free throw line, turns away from the basket, passes the ball to Allen, and sets a screen for Allen. Allen shoots and scores.
- 16. Adams passes to Allen in a situation that would normally warrant an assist, but a field goal does not result because defensive goaltending or defensive basket interference occurs.

- ___ 17. In a jump-ball situation, Adams directs the tip to Allen. Allen scores an uncontested layup.

In the following situations, write the name of the player that should receive credit for the assist if there is cause to award an assist.

- ___ 18. After taking a rebound off the defensive basket, Adams quickly passes to Allen at the mid-court line. Allen is wide open but passes to Alexander, who scores an uncontested layup.
- ___ 19. The same situation as in (18), with the exception that Allen is well-guarded when the pass is made to Alexander.
- ___ 20. The same situation as in (18), with the exception that Alexander returns the ball to Allen and Allen scores. Allen was well-guarded on the initial pass to Alexander, but had worked free for the return pass.

Errors

Choose the correct answer from the five selections and place the appropriate letter in the blank provided.

- A) Charge Alsup with an error
B) Charge Team A with an error
C) Charge Burns with an error
D) Charge Team B with an error
E) Charge no error on the play
- ___ 1. Team A scores a field goal. Before any player from Team B touches the ball, Burns draws a technical foul.
- ___ 2. Team A has possession of the ball. Allen double dribbles and the official indicates the violation. Before any player from Team B is handed the ball, Burns enters the game wearing the same uniform number as Brown.
- ___ 3. Team A is in control of the ball. Alsup and Burns collide, and both are charged with personal fouls. On the ensuing jump-ball situation, Team A is the first to gain control.
- ___ 4. Team A is in control of the ball when Alsup curses an official and is assessed a technical foul.

- 5. Alsup has control of the ball and is tied up by Burns. On the ensuing jump-ball situation, Team A is the first to gain control.
- 6. Alsup has control of the ball and is tied up by Burns. On the ensuing jump-ball situation, Team B is the first to gain control.
- 7. Team B is in control of the ball. Alsup and Burns collide, and both are charged with personal fouls. On the ensuing jump-ball situation, Team A is the first to gain control.
- 8. Team A is entitled to the ball when someone on the bench of Team A draws a technical foul.
- 9. Team B is in control of the ball when it is discovered that Team B has six players on the floor. Burns was the last substitute to enter the game.
- 10. Before the game begins, Team A violates a rule and is assessed a technical foul. The game begins with Team B at the free throw line.
- 11. Team B has the ball out-of-bounds for a throw-in, and Burns fouls Alsup.
- 12. Team A has the ball out-of-bounds. Alsup's inbounds pass, intended for Alexander, is intercepted.
- 13. Alsup is in control of the ball and is tied-up by Bates. Before or during the ensuing jump-ball situation, Burns fouls Allen.
- 14. Alsup is in control of the ball and is tied-up by Burns. Before or during the ensuing jump-ball situation, Team A's bench is charged with a technical foul.
- 15. Team B is in control of the ball. Burns passes to Bates, but fouls Alsup before the pass is in flight.
- 16. Team B is in control of the ball. Burns passes to Bates, but fouls Alsup after the pass is in flight.
- 17. Team A is in control of the ball when Alsup is called for traveling. Team A's coach is assessed a technical foul for protesting the call.

Choose the correct answer from the six selections given and place the appropriate letter in the blank provided.

- A) Charge Allen with an error
- B) Charge Team A with an error
- C) Charge Benton with an error
- D) Charge Team B with an error
- E) Charge both Allen and Benton with errors
- F) Charge no error on the play

- ___ 18. Brown is attempting to make a throw-in from out-of-bounds. Allen fouls Batey and it is the third foul of the period against Team A. Team B is awarded the ball. Brown again is attempting to make the throw-in, but Benton fouls Adler and it is the second foul of the period against Team B. It is now a false double foul, and Team A is awarded the ball out-of-bounds for a throw-in.
- ___ 19. Adams is attempting to make a throw-in from out-of-bounds. Benton fouls Allen and it is the eighth foul of the period against Team B. Allen makes both free throws. Brown takes the ball out-of-bounds to attempt the throw-in. Before the ball can be inbounded, Allen fouls Benton and it is the ninth foul of the period against Team A. The official considers the foul to be intentional. Baker is chosen to shoot both technical free throws and is successful. Team B is awarded the ball out-of-bounds for a throw-in.
- ___ 20. The same situation as in (19), with the exception that the official does not consider the foul by Allen to be intentional. Benton makes both shots of the one-and-one situation, and Team A is awarded the ball out-of-bounds for a throw-in.
- ___ 21. Adams is attempting to make a throw-in from out-of-bounds. Allen fouls Brown and it is the third foul of the period against Team A. Brown takes the ball out-of-bounds to attempt the throw-in. Before the ball can be inbounded, Benton fouls Adler and it is the second foul of the period against Team B. It is now a false double foul, and Team A is awarded the ball out-of-bounds for a throw-in.
- ___ 22. Adams is attempting to make a throw-in from out-of-bounds. Allen fouls Brown and it is the eighth foul of the period against Team A. Brown makes both free throws. Allen takes the ball out-of-bounds to attempt the throw-in. Before the ball can be inbounded,

Benton fouls Adler and it is the second foul of the period against Team B. It is now a false double foul, and Team A is awarded the ball out-of-bounds for a throw-in.

- 23. Adams is attempting to make a throw-in from out-of-bounds. Allen fouls Brown and it is the third foul of the period against Team A. Brown takes the ball out-of-bounds to attempt the throw-in. Before the ball can be inbounded, Benton fouls Adler and it is the ninth foul of the period against Team B. Adler makes both free throws, and Team B is awarded the ball out-of-bounds for a throw-in.

Choose the correct answer from the five selections given and place the appropriate letter in the blank provided.

- A) Charge Adams with an error
- B) Charge Allen with an error
- C) Charge Adler with an error
- D) Charge Team A with an error
- E) Charge no error on the play

- 24. Adams is in control of the ball and is tied up by Burns. Before or during the ensuing jump-ball situation, Allen fouls Benton.
- 25. Adams is in control of the ball and is tied up by Brown. Before or during the ensuing jump-ball situation, Allen is assessed a technical foul.
- 26. Adler is attempting to make a throw-in from out-of-bounds. No members of Team A are able to work free to receive the throw-in from Adler, and the allotted five seconds expire. Team B is awarded the ball out-of-bounds for a throw-in.
- 27. Adler is attempting to make a throw-in from out-of-bounds. Although members of Team A are breaking open, Adler does not inbound the ball within five seconds. Team B is awarded the ball out-of-bounds for a throw-in.
- 28. Adams is in control of the ball when it is batted away by Brown. While it is still loose on the floor, Allen commits a foul attempting to regain possession for Team A. The ball is awarded to Team B for a throw-in from out-of-bounds.

- ___ 29. Adams is in control of the ball when it is batted away by Brown. While it is loose on the floor, Adler commits a foul against Benton away from the ball. Neither Adler or Benton were attempting to gain possession of the ball. The ball is awarded to Team B for a throw-in from out-of-bounds.
- ___ 30. In women's collegiate basketball, Adams, Allen, Adler, Alsup, and Aaron each touch the ball on offense but pass up the attempt for a field goal. The 30-second shot clock expires with the ball in control of Allen.

Choose the correct answer from the four selections given and place the appropriate letter in the blank provided.

- A) Charge Adler with an error and credit Team A with a dead-ball rebound
 - B) Charge no error on the play and credit Team A with a dead-ball rebound
 - C) Charge no error on the play and credit Team B with a dead-ball rebound
 - D) Charge no error on the play and do not credit either team with a dead-ball rebound
- ___ 31. Adams is attempting to make a throw-in from out-of-bounds. Brown fouls Allen and it is the eighth foul of the period against Team B. Allen makes both free throws. Brown takes the ball out-of-bounds to attempt the throw-in. Before the ball can be inbounded, Adler fouls Benton and it is the second foul of the period against Team A. The official considers Adler's foul to be intentional. Baker is chosen to shoot the technical fouls. Baker misses the first shot, but makes the second. Team B is awarded the ball out-of-bounds for a throw-in.
- ___ 32. The same situation as in (31), with the exception that the official does not consider the foul by Adler to be intentional. Team B is awarded the ball out-of-bounds for a throw-in.

Choose the correct answer from the four selections given and place the appropriate letter in the blank provided.

- A) Charge Adler with an error and credit Team B with a team rebound
- B) Charge Adler with an error and credit Baker with an individual rebound
- C) Charge Brown with an error and credit Team B with a dead-ball rebound
- D) Charge no error and credit no rebound on the play

- ___ 33. Adams is attempting to make the throw-in from out-of-bounds. Brown fouls Adler and it is the third foul of the period against Team B. Team A is awarded the ball out-of-bounds, and Adams again is attempting to make the throw-in. Before the ball can be inbounded, Adler fouls Benton and it is the ninth foul of the period against Team A. Benton misses the first shot of the one-and-one free throw situation, and Baker rebounds.

Choose the correct answer from the four selections given and place the appropriate letter in the blank provided.

- A) Charge Adams with a field goal attempt
- B) Charge Adams with an error
- C) Charge Adams with a field goal attempt and an error
- D) Charge nothing on the play

- ___ 34. Adams is in the act of shooting. Brown blocks the ball after it is in flight.
- ___ 35. Adams is in the act of shooting. Brown blocks the ball as it is leaving Adams' hands.
- ___ 36. Adams is in the act of shooting. Brown blocks the ball before it is in flight. Team A gains control.
- ___ 37. Adams is in the act of shooting. Brown blocks the ball before it is in flight. Team B gains control.
- ___ 38. Adams tips in a shot by Amos that is still on the rim.

Choose the correct answer from the four selections given and place the appropriate letter in the blank provided.

- A) Charge Allen with an error, charge Adams with a free throw attempt
 - B) Charge Allen with an error, do not charge Adams with a free throw attempt
 - C) Do not charge Allen with an error, charge Adams with a free throw attempt
 - D) Do not charge Allen with an error, do not charge Adams with a free throw attempt
- ___ 39. Adams is shooting the first free throw of a two-shot foul situation. Allen commits a lane violation, but Adams is allowed to shoot the second free throw.
- ___ 40. Adams is shooting the second free throw of a two-shot foul situation. Allen commits a lane violation, and Team B is awarded the ball out-of-bounds.

Field Goal Attempts

Choose the correct answer from the three selections given and place the appropriate letter in the blank provided.

- A) Charge a field goal attempt and credit a field goal made to Adams
- B) Charge a field goal attempt, but do not credit a field goal made to Adams
- C) Do not charge a field goal attempt to Adams

- ___ 1. Adams is fouled in the act of shooting and the shot is successful.
- ___ 2. Adams is fouled in the act of shooting and the shot is unsuccessful.
- ___ 3. Adams is fouled in the act of shooting by Benton. While the ball is still on the rim, Brown bats it away.
- ___ 4. Adams is fouled in the act of shooting by Benton. The shot is successful, but there is doubt as to whether the foul occurred before or after the ball was in flight.
- ___ 5. Adams is fouled in the act of shooting by Benton. The shot is unsuccessful, but there is doubt as to whether the foul occurred before or after the ball was in flight. The official awards two free throws to Adams.
- ___ 6. The same situation as in (5), with the exception that the official awards one free throw to Adams.
- ___ 7. Adams is fouled intentionally by Brown after Adams has completed a field goal attempt. The shot is unsuccessful.
- ___ 8. Adams shoots. While the ball is in flight toward the goal, Brown is called for defensive goaltending.
- ___ 9. Adams shoots. Brown touches the ball in an attempt to block the shot, but the ball continues into the basket.

Choose the correct answer from the three selections given and place the appropriate letter in the blank provided.

- A) Charge Adams with a field goal attempt
- B) Charge Adams with an error
- C) Do not charge Adams with a field goal attempt or an error

- ___ 10. Adams shoots, but fouls Brown before the ball is in flight.
- ___ 11. Adams shoots, but fouls Brown after the ball is in flight.
- ___ 12. Adams shoots. Brown fouls Adams after the ball is in flight. While the ball is still on the rim, Allen is called for offensive goaltending.
- ___ 13. Adams shoots and is aware the shot will be unsuccessful. In attempting to tip the ball in the basket, Adams goaltends the shot.

Choose the appropriate statistical ruling that would apply in the following situations.

- ___ 14. Adams' shot bounces on the rim. Allen tips the ball in the basket while it is still on the rim.
 - A) Charge a field goal attempt to Adams. Charge a field goal attempt and credit a field goal made to Allen.
 - B) Do not charge a field goal attempt to Adams. Charge a field goal attempt and credit a field goal made to Allen.
 - C) Do not charge a field goal attempt to either Adams or Allen. Charge an error to Allen.
 - D) Do not charge a field goal attempt to either Adams or Allen. Do not charge an error to either Adams or Allen.
- ___ 15. Adams' shot bounces on the rim. After the ball has bounced to the side and it is obvious that Adams' attempt will not be successful, Allen tips the ball in the basket.
 - A) Charge a field goal attempt to Adams. Charge a field goal attempt, credit a field goal made, and credit a rebound to Allen.
 - B) Do not charge a field goal attempt to Adams. Charge a field goal attempt and credit a field goal made to Allen.

- C) Do not charge a field goal attempt to either Adams or Allen. Charge an error to Allen.
- D) Do not charge a field goal attempt to either Adams or Allen. Credit Team A with the two points.

____ 16. Adams shoots. During the shot Brown hangs on the rim and is assessed a technical foul. The official does not rule basket interference. Team A is awarded the ball for a free throw and then is awarded the ball out-of-bounds for a throw-in.

- A) Do not charge a field goal attempt to Adams
- B) Charge a field goal attempt to Adams. Charge an error to Brown.
- C) Charge a field goal attempt to Adams. Credit a team rebound to Team A.
- D) Charge a field goal attempt to Adams. Credit a dead-ball rebound to Team A.

____ 17. Adams' field goal attempt is unsuccessful. Allen tips the missed shot. While Allen's tip is still on the rim, Adler tips the ball in the basket. Due to Adler's interference, the goal is nullified, and the ball is awarded to Team B out-of-bounds for a throw-in.

- A) Charge a field goal attempt to Adams. Charge an error to Adler. Charge a field goal attempt and credit a rebound to Allen.
- B) Charge a field goal attempt to Adams. Charge an error to Adler. Do not charge a field goal attempt to Allen, but credit Allen with a rebound.
- C) Do not charge a field goal attempt to either Adams or Allen. Charge a field goal attempt and credit a rebound to Adler.
- D) Charge a field goal attempt to Adams. Charge a field goal attempt to Allen. Charge a field goal attempt and an error to Adler. Credit a dead-ball rebound to Team B.

— 18. Allen's field goal attempt is unsuccessful. In the scramble for the rebound, both Adams and Brown attempt to tip the ball. Brown eventually tips the ball in the basket.

- A) Charge a field goal attempt to Allen. Credit a dead-ball rebound and two points, in the form of a footnote, to Team A.
- B) Charge a field goal attempt to Allen. Charge a field goal attempt to Adams. Credit a field goal made and a rebound to Adams.
- C) Do not charge a field goal attempt to Allen. Do not charge a field goal attempt or credit a rebound to Adams. Credit two points to Adams.
- D) Charge a field goal attempt to Allen. Charge a field goal attempt and an error to Adams.

— 19. The same situation as in (18), with the exception that both Adams and Brown appear to tip the ball in the basket at the same time.

- A) Charge a field goal attempt to Allen. Charge a field goal attempt to Adams. Credit a field goal made and a rebound to Adams.
- B) Charge a field goal attempt to Allen. Credit a dead-ball rebound and two points, in the form of a footnote, to Team A.
- C) Charge a field goal attempt and credit a field goal made to Allen.
- D) Charge a field goal attempt to Allen. Charge an error to Brown. Credit a team rebound and two points, in the form of a footnote, to Team A.

— 20. Brown's pass for Benton is deflected by Adams. In the scramble for the ball, Baker accidentally tips the ball into Team A's basket.

- A) Charge a field goal attempt and credit a field goal made to Adams. Charge an error to Baker.
- B) Do not charge a field goal attempt or credit a field goal made to any player. Charge an error to Baker.

- C) Do not charge a field goal attempt or credit a field goal made to any player. Charge an error to Brown. Credit two points, in the form of a footnote, to Team A.
- D) Do not charge a field goal attempt or credit a field goal made to any player. Do not charge an error to any player. Charge an error to Team B. Credit two points, in the form of a footnote, to Team A.

Free Throw Attempts

Choose the correct answers from the five selections given and place the appropriate letters in the blank provided.

- A) Charge Allen with a free throw attempt
- B) Credit Allen with a free throw made
- C) Do not charge Allen with a free throw attempt
- D) Charge Adams with an error
- E) Charge Allen with an error

- ___ 1. Allen's free throw attempt is successful, but Brown commits a free throw violation during the shot.
- ___ 2. Allen's free throw attempt is unsuccessful, but Brown commits a free throw violation during the shot.
- ___ 3. Allen's free throw attempt is successful, but Adams commits a free throw violation during the shot. Team A retains possession for a throw-in from out-of-bounds.
- ___ 4. Allen's free throw attempt is unsuccessful, but Adams commits a free throw violation during the shot. Team B is awarded the ball for a throw-in from out-of-bounds.
- ___ 5. Allen's free throw attempt fails to hit the rim and falls to the floor. Allen was not distracted by any other player while shooting.
- ___ 6. Allen's free throw attempt fails to hit the rim, because Brown jumped into the lane and batted it away.
- ___ 7. Allen's free throw attempt is unsuccessful, but Adams and Brown each commit free throw violations. Team B is awarded the ball on the ensuing jump-ball.

- ___ 8. Allen's first free throw attempt, in a two-shot free throw situation, is successful. Adams and Brown commit free throw violations during the shot.
- ___ 9. Allen has been handed the ball by the official and is ready to attempt the second free throw of a two-shot free throw situation. Adams steps into the lane before Allen can shoot the ball.
- ___ 10. The same situation as in (9), with the exception that Allen steps over the foul line when shooting the ball. The free throw attempt is successful

Rebounds

In the first space provided next to each situation, indicate whether an individual, team, or dead-ball rebound should be awarded. In the second space, indicate the player or team to which the rebound should be credited.

- ___ 1. Allen's free throw attempt is unsuccessful. The ball becomes dead as soon as it is apparent the shot will be unsuccessful. Team A is awarded another free throw.
- ___ 2. The same situation as in (1), with the exception that the unsuccessful attempt is to be followed by a throw-in from out-of-bounds by Team A.
- ___ 3. The same situation as in (1), with the exception that the unsuccessful attempt is to be followed by a throw-in from out-of-bounds by Team B.
- ___ 4. The same situation as in (1), with the exception that the unsuccessful attempt is to be followed by a free throw attempt by a player from Team B.
- ___ 5. The same situation as in (1), with the exception that the unsuccessful attempt is followed by a jump-ball situation. The ball is ultimately awarded to Team A.
- ___ 6. On a missed field goal attempt, Adams and Brown retrieve the ball simultaneously. On the ensuing jump-ball situation, Team A commits a violation before control can be established by either team.
- ___ 7. Adams' field goal attempt is unsuccessful. It bounces over the backboard and hits the backboard support.

- _____ 8. Adams' field goal attempt is unsuccessful. As the
_____ ball is coming off the rim, and before it has been
_____ touched by any player, Adler fouls Brown.
- _____ 9. An unsuccessful field goal attempt is bouncing on
_____ the floor. Adams is in position to catch the ball,
_____ but Brown fouls Allen before Adams can touch the
_____ ball.
- _____ 10. The same situation as in (9), with the exception
_____ that the foul occurs after Adams gains control of
_____ the ball.
- _____ 11. The same situation as in (9), with the exception
_____ that the foul occurs as Adams touches the ball.
_____ The statistician feels as though Adams possibly
_____ had control when the foul occurred.
- _____ 12. The same situation as in (9), with the exception
_____ that the foul occurs as Adams touches the ball.
_____ The statistician feels as though Adams did not
_____ have control when the foul occurred.
- _____ 13. Adams' technical free throw attempt is unsuccessful.
_____ Team A is awarded the ball out-of-bounds
_____ for a throw-in.
- _____ 14. Adams' free throw attempt fails to hit the rim.
_____ The ball is awarded to Team B for a throw-in from
_____ out-of-bounds.
- _____ 15. Adler shoots a 20 foot jumper and is unsuccessful.
_____ Allen, unable to control the ball, tips it
_____ to Adams. Adams gains control of the ball.
- _____ 16. Allen attempts to tip an unsuccessful field goal
_____ attempt to Adams, but the ball goes out-of-
_____ bounds before any other player can touch it. Team
_____ B is awarded the ball out-of-bounds for a throw-in.
- _____ 17. Benton's unsuccessful field goal attempt is bouncing
_____ on the floor. Adams is in position to catch
_____ the ball, but elects instead to block Brown off as
_____ the ball rolls out-of-bounds.
- _____ 18. Adams' unsuccessful field goal attempt lodges between
_____ the basket and the backboard. Team A is
_____ awarded the ball on the ensuing jump-ball situation.

- _____ 19. Benton's unsuccessful field goal attempt is tipped
_____ by Baker over the backboard and into the basket
_____ support.
- _____ 20. Allen's field goal attempt is slightly deflected
_____ by Brown. The shot is unsuccessful, and is con-
_____ trolled by Benton. The statistician feels that
_____ the deflection by Brown was the most important
_____ part of the play.
- _____ 21. The same situation as in (20), with the exception
_____ that the statistician feels the deflection was
_____ only an incidental part of the play.
- _____ 22. Benton's unsuccessful field goal attempt is re-
_____ covered simultaneously by Allen and Brown. Team A
_____ gains control on the ensuing jump-ball situation.
- _____ 23. Allen's field goal attempt is blocked by Brown.
_____ Adams gains control of the ball while it is still
_____ in the air.
- _____ 24. The same situation as in (23), with the exception
_____ that the ball rolls out-of-bounds before either
_____ team gains control. Team B is awarded the ball
_____ for a throw-in from out-of-bounds.
- _____ 25. An unsuccessful field goal attempt is bouncing on
_____ the floor. Adler is in position to catch the
_____ ball, but Benton fouls Adler before either player
_____ can touch the ball. Benton then gains control.
- _____ 26. The same situation as in (25), with the exception
_____ that Benton fouls Adler after Adler is the first
_____ player to touch the ball. Benton then gains con-
_____ trol. The statistician feels as though Adler did
_____ not have control before being fouled by Benton.
- _____ 27. Adams' field goal attempt is unsuccessful. Allen
_____ is fouled by Benton as Allen attempts to tip the
_____ unsuccessful shot in the basket. The foul by
_____ Benton is committed before Allen touches the ball.
- _____ 28. The same situation as in (27), with the exception
_____ that the foul by Benton occurs as Allen is touch-
_____ ing the ball. The statistician feels there is a
_____ possibility that Allen had control of the ball.
- _____ 29. The same situation as in (27), with the exception
_____ that the foul by Benton occurs as Allen is touch-
_____ ing the ball and is in the tipping motion.

- _____ 30. Brown is in position to control an unsuccessful field goal attempt. Adams bats the ball out-of-bounds before Brown can touch the ball.
- _____ 31. The same situation as in (30), with the exception that Adams bats the ball out-of-bounds as Brown touches the ball. The statistician feels as though Brown did not have control of the ball.
- _____ 32. The same situation as in (30), with the exception that the ball is batted out-of-bounds by Adams after Brown gains control of the ball.
- _____ 33. Time expires in the first half as Brown's field goal attempt is still in flight. The shot is ultimately unsuccessful.
- _____ 34. The same situation as in (33), with the exception that time expires as the unsuccessful field goal attempt is touched by Adams. The statistician feels as though Adams did not have control of the ball.
- _____ 35. The same situation as in (33), with the exception that time does not expire in the half until after Adams has gained control of the ball.
- _____ 36. The same situation as in (33), with the exception that time expires as Adams and Benton simultaneously gain control of the ball to cause a jump-ball situation.

Choose the appropriate statistical ruling that would apply in the following situations.

- _____ 37. Allen attempts to tip an unsuccessful field goal attempt to Adams. Allen is successful, but Adams fumbles the ball after gaining control. Brown retrieves the loose ball.
- A) Credit Adams with an individual rebound. Charge Adams with an error.
 - B) Credit Allen with an individual rebound. Charge Adams with an error.
 - C) Credit Brown with an individual rebound. Charge Adams with an error.
 - D) Credit Team B with a team rebound. Charge no error.

- 38. Allen attempts to tip an unsuccessful field goal attempt to Adams, but Benton is the first player to gain control of the ball.
- A) Credit Allen with an individual rebound. Charge Allen with an error.
 - B) Credit Team B with a team rebound. Charge no error.
 - C) Credit Team B with a dead-ball rebound. Charge no error.
 - D) Credit Benton with an individual rebound. Charge no error.
- 39. An unsuccessful field goal attempt is controlled by Allen, who is then tied up by Brown forcing a jump-ball situation. Team A gains control of the ball on the ensuing jump-ball situation.
- A) Credit Allen with an individual rebound. Charge Allen with an error.
 - B) Credit Brown with an individual rebound. Charge Brown with an error.
 - C) Credit Allen with an individual rebound. Charge no error.
 - D) Credit Brown with an individual rebound. Charge no error.
- 40. The same situation as in (39), with the exception that Team B gains control of the ball on the ensuing jump-ball situation.
- A) Credit Allen with an individual rebound. Charge Allen with an error.
 - B) Credit Team B with a team rebound. Charge Allen with an error.
 - C) Credit Team B with a team rebound. Charge no error.
 - D) Credit Brown with an individual rebound. Charge no error.
- 41. An unsuccessful field goal attempt is bouncing on the floor. Adams is in a position to control the ball, but Allen fouls Brown as Adams is touching the ball. The official rules that Allen's foul is a player-control foul.

- A) Credit Adams with an individual rebound. Charge Allen with an error.
- B) Credit Team A with a team rebound. Charge Allen with an error.
- C) Credit Team A with a dead-ball rebound. Charge Allen with an error.
- D) Credit Team B with a dead-ball rebound. Charge no error.

— 42. The same situation as in (41), with the exception that the official rules Allen's foul was not a player control foul.

- A) Credit Adams with an individual rebound. Charge no error.
- B) Credit Team A with a team rebound. Charge Allen with an error.
- C) Credit Team A with a dead-ball rebound. Charge no error.
- D) Credit Team B with a dead-ball rebound. Charge no error.

— 43. The same situation as in (41), with the exception that the foul occurs after Adams gains control of the ball.

- A) Credit Adams with an individual rebound. Charge no error.
- B) Credit Adams with an individual rebound. Charge Allen with an error.
- C) Credit Team A with a dead-ball rebound. Charge no error.
- D) Credit Team A with a dead-ball rebound. Charge Allen with an error.

— 44. An unsuccessful field goal attempt is bouncing on the floor. Adler is in a position to catch the ball, but Benton gains control after fouling Adler. The foul occurred as Benton touched the ball, and the official rules it was a player-control foul.

- A) Credit Adler with an individual rebound. Charge no error.

- B) Credit Benton with an individual rebound. Charge Benton with an error.
- C) Credit Benton with an individual rebound. Charge no error.
- D) Credit Team A with a dead-ball rebound. Charge no error.

___ 45. The same situation as in (44), with the exception that the official rules the foul by Benton was not a player-control foul.

- A) Credit Adler with an individual rebound. Charge no error.
- B) Credit Team B with a dead-ball rebound. Charge no error.
- C) Credit Team B with a team rebound. Charge Benton with an error.
- D) Credit Team B with a dead-ball rebound. Charge Benton with an error.

Statistical Computations

Determine the values for the following computations, and place the answer in the blank provided.

- ___ 1. Team A successfully converted 526 of 1232 attempted field goals during the 1977-78 season. What was Team A's field goal percentage for that season?
- ___ 2. Team B successfully converted 523 of 702 attempted free throws during the 1978-79 season. What was Team B's free throw percentage for that season?

In 750 minutes and 30 seconds of playing time during the 1976-77 season, Smith totaled 65 assists, 102 errors, 40 steals, and 375 points. Determine the per-minute average for each of Smith's totals.

- ___ 3. Assists-per-minute
- ___ 4. Errors-per-minute
- ___ 5. Steals-per-minute
- ___ 6. Points-per-minute

During the 1976-77 season, Team A scored 2175 points. Of that total, Brown scored 631, Carter scored 562, Daily scored 378, Easley scored 285, Freels scored 150, Grant scored 133, and Hudson scored 36. Determine the percentage of the team total each player accounted for over the course of that season.

- _____ 7. Brown
 _____ 8. Carter
 _____ 9. Daily
 _____ 10. Easley
 _____ 11. Freels
 _____ 12. Grant
 _____ 13. Hudson
 _____ 14. During the 1976-77 season, Team A totalled 1157 rebounds. Team A's opponents totaled 1063. What was Team A's rebounding percentage for that season?
 _____ 15. Team A averaged 72.4 points-per-game over the course of the 1979-80 season. Team A's opponents scored 75.0 points-per-game. What was Team A's scoring margin for that season?

Determine the game efficiency rating for each of the following sets of statistics:

		DEF							
		<u>REB</u>	<u>AST</u>	<u>STE</u>	<u>ERR</u>	<u>PTS</u>	<u>FGM</u>	<u>FGA</u>	<u>FTM</u> <u>FTA</u>
_____ 16.		31	10	18	19	65	30	65	5 13
_____ 17.		23	6	8	15	64	27	58	10 21
_____ 18.		19	14	12	24	62	25	64	12 20
_____ 19.		32	9	9	11	39	17	60	5 14
_____ 20.		27	6	3	25	50	18	47	14 23

From the example given below, determine the efficiency rating for each statement presented.

<u>NOTES</u>	<u>POSSESSION</u>	<u>SCORE</u>
	1. 1(21) R(32)	
	2. E ³ (21)	
	3. 2(51)	2
	4. 1(41) R(54)	
	5. 2(31) ●(31)	5
33,43 for 31,41	6. E ^t (21)	
	7. 1(11) Ⓡ(11) Ⓢ(11)	6
	8. E ^d (33)	
Time-out	9. 1(11) R(22)	
	10. ●(21) R(52)	7

- ___ 21. Overall Offensive Efficiency Rating
- ___ 22. Offensive Efficiency Rating, first five possessions
- ___ 23. Offensive Efficiency Rating, final five possessions
- ___ 24. Offensive Efficiency Rating prior to the first time-out
- ___ 25. Offensive Efficiency Rating after the first time-out
- ___ 26. Player combination with the highest Offensive Efficiency Rating
- ___ 27. Player combination with the lowest Offensive Efficiency Rating
- ___ 28. Overall Offensive Efficiency Rating Potential

AnswersGeneral Statistical Concepts

1. True
2. False (Blocked shots count as attempts if the ball was in flight before being blocked.)
3. True
4. False (When a player shoots and is fouled after the ball is in flight, a field goal attempt is charged whether the shot is successful or unsuccessful.)
5. True
6. True
7. False (If the touching by Team B was an attempt to block a shot by a player from Team A and did not alter the ball's flight, the touching is ignored. If the touching by Team B followed an attempt by Team A that was obviously unsuccessful, the two points are awarded to Team A but not to an individual player.)
8. True
9. True
10. True
11. False (The statistician should consider only what did happen, not what might have happened.)
12. False (Only individual and team rebounds should reflect team rebounding ability.)
13. True
14. False (A dead-ball rebound is credited to the shooting team if time expires while the ball is in the air.)
15. True

16. False (A team may be charged with an error if the team is entitled to the ball but not yet in possession of the ball.)
17. False (Only the offensive team may be charged with an error.)
18. True
19. False (The assist should be awarded for whatever pass is primarily responsible for the score.)
20. False (The type of shot or number of dribbles taken by the shooter are not the crucial factors when determining whether to award an assist.)

Assists

An assist should be awarded in the following statements:

- 2, 3, 5, 7, 9, 11, 12, 14, 15, 16, and 17.
18. Adams
19. Allen
20. Alexander

Errors

- | | | | |
|-------|-------|-------|-------|
| 1. C | 11. C | 21. E | 31. C |
| 2. D | 12. A | 22. A | 32. D |
| 3. E | 13. E | 23. E | 33. B |
| 4. A | 14. B | 24. A | 34. A |
| 5. E | 15. C | 25. B | 35. A |
| 6. A | 16. C | 26. D | 36. D |
| 7. C | 17. A | 27. C | 37. B |
| 8. B | 18. C | 28. A | 38. B |
| 9. D | 19. F | 29. C | 39. D |
| 10. E | 20. F | 30. D | 40. B |

Field Goal Attempts

1. A	6. B	11. A	16. D
2. C	7. B	12. C	17. B
3. A	8. A	13. B	18. A
4. A	9. A	14. C	19. A
5. C	10. B	15. A	20. C

Free Throw Attempts

1. A,B	6. C
2. C	7. C,D
3. C	8. C
4. C,D	9. C,D
5. A	10. C,E

Rebounds

1. Dead-ball - Team A	12. Dead-ball - Team A
2. Dead-ball - Team A	13. Dead-ball - Team A
3. Dead-ball - Team B	14. Dead-ball - Team B
4. Dead-ball - Team B	15. Individual - Allen
5. Dead-ball - Team A	16. Team - Team B
6. Individual - Brown	17. Team - Team A
7. Dead-ball - Team B	18. Dead-ball - Team A
8. Dead-ball - Team B	19. Team - Team A
9. Dead-ball - Team A	20. Individual - Brown
10. Individual - Adams	21. Individual - Benton
11. Individual - Adams	22. Individual - Allen

23. Individual - Adams	35. Individual - Adams
24. Team - Team B	36. Dead-ball - Team B
25. Dead-ball - Team A	37. B
26. Dead-ball - Team A	38. D
27. Dead-ball - Team A	39. C
28. Individual - Allen	40. A
29. Individual - Allen	41. A
30. Team - Team B	42. D
31. Team - Team B	43. B
32. Individual - Brown	44. B
33. Dead-ball - Team B	45. B
34. Dead-ball - Team B	

Statistical Computations

1. 42.7%	10. 13.1%	19. 26
2. 74.5%	11. 6.9%	20. 23
3. .087	12. 6.1%	21. 0.70
4. .136	13. 1.7%	22. 1.00
5. .053	14. 52.1%	23. 0.40
6. .500	15. -2.6	24. 0.75
7. 29.0%	16. 62	25. 0.50
8. 25.8%	17. 44	26. starters
9. 17.4%	18. 36	27. substitutes
		28. 1.00

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