

FOR BASKETBALL COACHES ONLY

INTRODUCTION

Intuitively most coaches, teams, and fans realize that there is a point in most games where "you know you have won" or "you know you have lost" unless "a miracle happens". Until now such a point has been a vague sort of thing since there was no way to quantify it. Most have assumed that it occurs much later than it actually does. You can see this during the final minute of almost every game.

During the final minute, no matter how hopeless the score, the losing team finally realizes that the game is about to be lost. They then begin what I call "heroic action" (more about that later but you probably already know what I mean). Unfortunately, by the time they begin the heroic action, the game is **already** lost.

However, as a coach you cannot afford to be unsure about when this Point of Win (POW) occurs. Fortunately there is now no longer any reason to be unsure. There is a scientific method, explained in the next section, which determines exactly when it occurs.

It is my conviction that:

- (1) Knowing when the opposing team reaches the Point Of Win and Knowing that you have lost the game without some sort of heroic action,
- that
- (2) If you begin heroic action **at the Point Of Win** rather than waiting until the last minute

Some of your lost games could be won!

Now for the determination of the POW, which fortunately is not difficult. See the following section.

DETERMINATION OF THE POINT OF WIN (POW)

The system for determining the POW is deceptively simple. It consists of three easy steps:

1. Look at the game clock and round UP to the nearest minute.
2. Multiply this number by 2
3. Add 1

As soon as a team is ahead by this many points PLUS has possession of the ball; my scientific research indicates that they will be the winner with a reliability greater than 98%.

Let's take an example to be sure you are clear on the concept. The time remaining is 2:31 minutes. Round up to 3 minutes and multiply by 2 which is equal to 6. Add one which makes the requirement to win equal to 7 points. If the leading team is ahead by this many points AND has possession of the ball, they have reached the POW and can reliably expect to win the game.

Following is a chart you can use to test your math and understanding of the concept. Or if you prefer, you can easily determine the winner by simply referring to the chart.

0:00 To 1:00 Minutes	3 Points PLUS Possession of The Ball
1:01 To 2:00 Minutes	5 Points PLUS Possession of The Ball
2:01 To 3:00 Minutes	7 Points PLUS Possession of The Ball
3:01 To 4:00 Minutes	9 Points PLUS Possession of The Ball
4:01 To 5:00 Minutes	11 Points PLUS Possession of The Ball
5:01 To 6:00 Minutes	13 Points PLUS Possession of The Ball
6:01 To 7:00 Minutes	15 Points PLUS Possession of The Ball
7:01 To 8:00 Minutes	17 Points PLUS Possession of The Ball

It is necessary to remember that possession of the ball is **very important**. I made several wrong calls when I invented the system and did not realize that the winning team had to have possession of the ball before it could be declared the winner.

At this point you are probably wondering if this system really works. Perhaps you are thinking of a game in which you feel that it would not have worked. There is only one way to know for sure. Pull the game tape and see when the POW was reached and who won the game.

This system has indeed failed twice during the 36 years and 400 plus games in which I have used it. Which is why its reliability is only 98.7%. If you are into statistics, there is a Statistics section near the end of this report where you can see the computations. However, the logic is simple. Unless a team begins early "heroic action" **points cannot be scored fast enough to outrun the clock**. This being the case, most games are over long before anyone realizes it.

During the first six months of 2000, I watched 53 consecutive games with no failures. They are all in the Appendix and are the only games I watched during those six months.

Included in these games are the NCAA championship games for both the men's and women's games and the NBA championship game. Also included are the NIT championship game, all four of the NCAA Final 4, five conference championships, some from the Sweet 16 and the New Mexico boys' high school championship game. By consulting the Appendix you can see the exact second in which each game was won.

This is a system that has a great potential for you to exploit. Now that you can know **when** the game is lost you now know when to start your players playing with a nothing-to-lose abandonment. I like to call this abandonment **heroic action**.

Some progressive examples of heroic action are:

1. An increased tempo of play. Every player is intently focused and moves with increased urgency
2. Every player aggressively goes for the ball with little regards as to fouling.
3. Every player aggressively goes for the ball with no regards as to fouling.
4. Players intentionally foul poor free throw shooters.

5. Players intentionally foul anyone they can get their hands on.

Basically I see the action beginning with 1 and 2 and progressing to 3, 4, and 5 as required. Heroic action is the sort of thing the losing team does during the last minute of virtually every lost game. For some reason during the last minute of a game teams seem to finally realize that it is about to be lost. Unfortunately, by that time the game is **already** lost and their heroic action is wasted because they waited too late to start.

Coach, do yourself a favor. Pull out the game tape of the last game you lost. Compute the Point Of Win. Then notice how long it is before your players realize they are about to lose the game.

Now do the same for the rest of the games. Notice how you **never even tied the score** after the POW. You can't win games unless you can at least tie the score. But had you known, could you have won?

Well, let's be honest. Those games decided with six minutes or so to go, probably could not have been won. There is only so much you can do. You are always going to lose the games you can't win and win the games you can't lose.

Also, in the games decided with one minute or less this system probably offers little. Your people needed no further heroic action in those games; they were already giving it all they had.

It is those in between games, the ones that left you with the vague, empty feeling that there must have been something else you could have done. It is those games that were lost with one to five minutes left that are the prime area to consider. I believe that these games can be won if you take decisive action based on the reality that it is too late for normal play.

Just the surprise to the other team when you begin the heroic action, might in itself start things your way. Momentum sometimes needs only a little kick to jump-start it. Anyway, **if you have lost the game already, what else is there to lose?**

Suppose you would like to give this system a try. Is the computation of the POW something that you, the head coach should be thinking about during the game? **No, absolutely not.** You have far too many things on you plate during that time.

Then should it be assigned to one of your assistants? Again, no for the same reason. Let me suggest this. Pick an engineering or math student. One that you trust unquestioningly. Then make a rule that they will never talk to you during the game

until it is time for heroic action. Then **act immediately** as a team effort and surprise yourself with what you can do!

If you have any questions, I will be happy to answer them. Use my home telephone number from my letter to you or send me an E-mail. [Click for E-mail.](#)

Copyright 2000 by C. D. Gragg, All rights reserved, [Legal Notice](#)

[HOME](#) [UPDATE](#) [CONGRESS](#) [SMOKERS](#) [CRAPS](#) [BASKETBALL](#) [PENNY](#)
[DEE'S LAWS](#)

STATISTICS

In statistics there is a technique called 'One Shot Reliability'. This method is in wide use where there are only two possible outcomes. Some examples are: yes or no, on or off, squib fired or squib did not fire, or success or failure. This analysis technique fits our data perfectly as we have only success or failure as possible outcomes. The formula for the calculation is as follows.

$$R = \frac{1}{1 + ((f + 1) / n - f) (F_{0.1} (2f+2, 2n-2f))}$$

Where:

R = The minimum reliability demonstrated at a given confidence

n = Number of trials (Games played)

f = Number of failures observed (System said game was lost and it was won)

2f+2 = Degrees of freedom in the numerator of the F distribution

2n-2f = Degrees of freedom in the denominator of the F distribution

F_{0.1} = 0.90 confidence level (Listed under 0.1 in the F distribution table)

Sample Calculation For: 350 successes and 2 failures

$$R = \frac{1}{1 + ((2 + 1) / 350 - 2) (F_{0.1} (4+2, 700-4))}$$

$$R = \frac{1}{1 + ((3) / 348)) (F_{0.1} (6, 696))}$$

$$R = \frac{1}{1 + ((3) / 348)) (F_{0.1} (6, 696))} = \frac{1}{1 + (3 / 348) (1.79)} = \underline{0.985}$$

Sample Calculation For: 53 successes and no failures

$$R = \frac{1}{1 + ((0 + 1) / 53 - 0)) (F_{0.1} (0+2, 2(53)-0))}$$

$$R = \frac{1}{1 + ((1) / 53)) (F_{0.1} (2, 106))}$$

$$R = \frac{1}{1 + ((1) / 53)) (F_{0.1} (2, 106))} = \frac{1}{1 + (1 / 53) (2.36)} = \underline{0.957}$$

Sample Calculation For: 403 successes and 2 failures

$$R = \frac{1}{1 + ((2 + 1) / 403 - 2)) (F_{0.1} (4+2, 2(403)-4))}$$

$$R = \frac{1}{1 + ((3) / 401)) (F_{0.1} (6, 802))}$$

$$R = \frac{1}{1 + ((3) / 401)) (F_{0.1} (6, 802))} = \frac{1}{1 + (3 / 401) (1.79)} = \underline{0.987}$$

APPENDIX

Date	Type	Game Called	Final Score
------	------	-------------	-------------

		Score	Time	
Jan 29, 2000	Men's College	Iowa State 65 Kansas 60	2:00	Iowa State 74 Kansas 66
Jan 29, 2000	Men Professional	Minnesota 85 Utah 77	2:45	Minnesota 96 Utah 94
Jan 29, 2000	Men's College	New Mexico 72 BYU 69	1:00	New Mexico 78 BYU 69
Feb 2, 2000	Women's College	Tennessee Connecticut	No Call*	Tennessee 72 Connecticut 71
Feb 12, 2000	Men's College	Texas Missouri	No Call*	Texas 66 Missouri 63
Feb 15, 2000	Men's College	Villanova 76 West Virginia 71	2:00	Villanova 87 West Virginia 77
Feb 17, 2000	Men's College	New Mexico 75 BYU 66	3:55	New Mexico 78 BYU 74
Feb 19, 2000	Women's College	Texas Tech 76 Oklahoma 70	1:44	Texas Tech 86 Oklahoma 81
Feb 19, 2000	Men's College	Maryland 70 Wake Forest 67	0:21	Maryland 73 Wake Forest 67
Feb 19, 2000	Girls High School	Tularosa Capitan	No Call*	Tularosa 55 Capitan 51
Feb 22, 2000	Girls High School	Deming 47 Alamogordo 44	1:00	Deming 52 Alamogordo 47
Feb 23, 2000	Men's College	North Carolina 70 Florida State 67	0:03	North Carolina 70 Florida State 67
Feb 23, 2000	Men's Professional	Lakers 98 Cavaliers 86	4:35	Lakers 116 Cavaliers 98
Feb 24, 2000	Men's College	South Florida 61 Marquette 58	0:57	South Florida 61 Marquette 60
Feb 25, 2000	Boys High School	Alamogordo 55	2:03	Alamogordo 64

		Deming 48		Deming 52
Feb 26, 2000	Men's College	Maryland 67 North Carolina 57	4:00	Maryland 81 North Carolina 73
Feb 26, 2000	Men's College	Oklahoma 58 Missouri 40	8:00	Oklahoma 83 Missouri 56
Feb 26, 2000	Men's College	New Mexico 57 San Diego 40	7:58	New Mexico 78 San Diego 49
Mar 2, 2000	Men's College	Cincinnati DePaul	No Call*	Cincinnati 64 DePaul 62
Mar 4, 2000	Men's College	Oklahoma 59 Oklahoma State 56	0:02	Oklahoma 59 Oklahoma State 56
Mar 6, 2000	Women's College Atl-10 Champion	Xavier 65 Geo Washington 51	5:04	Xavier 80 Geo Washington 66
Mar 6, 2000	Men's College NEC Champion	Central Conn 52 Robert Morris 41	4:10	Central Conn 63 Robert Morris 46
Mar 6, 2000	Women's College USA Champion	Tulane 65 UAB 61	1:00	Tulane 73 UAB 70
Mar 9, 2000	Men's College	Florida State Georgia Tech	No Call*	Florida State 63 Georgia Tech 62
Mar 10, 2000	Men's College	St. John's Miami	No Call*	St. John's 58 Miami 57
Mar 10, 2000	Men's College	Wisconsin 66 Purdue 59	2:26	Wisconsin 78 Purdue 66
Mar 11, 2000	Men's College Big 12 Semi	Oklahoma 65 Texas 52	5:08	Oklahoma 81 Texas 65
Mar 11, 2000	Women's College Mountain Champ	Utah 49 BYU 27	9:01	Utah 61 BYU 47
Mar 12, 2000	Men's Professional	Miami 95 Indiana 87	2:30	Miami 105 Indiana 96
Mar 12, 2000	Men's College Big 12 Champion	Iowa State 56 Oklahoma 42	6:00	Iowa State 70 Oklahoma 58

Mar 15, 2000	Men's College	Notre Dame 69 Michigan 61	3:00	Notre Dame 75 Michigan 65
Mar 16, 2000	Men's College	Gonzaga 67 Louisville 60	2:38	Gonzaga 77 Louisville 66
Mar 17, 2000	Women's College	UAB Oregon	No Call*	UAB 80 Oregon 79
Mar 18, 2000	Men's College	LSU 66 Texas 60	1:08	LSU 72 Texas 67
Mar 18, 2000	Boys' High School NM AAAA Champ	Hobbs 68 Valley 59	2:18	Hobbs 77 Valley 66
Mar 18, 2000	Boys' High School NM A Champion	Tatum 61 Cliff 55	1:51	Tatum 64 Cliff 58
Mar 19, 2000	Women's College Sweet 16	Rutgers 42 St. Joseph's 29	6:00	Rutgers 59 St. Joseph's 39
Mar 19, 2000	Women's College Sweet 16	Connecticut 61 Clemson 34	12:41	Connecticut 83 Clemson 45
Mar 23, 2000	Men's College Sweet 16	Purdue 63 Gonzaga 53	2:42	Purdue 75 Gonzaga 66
Mar 23, 2000	Men's College Sweet 16	Iowa State 61 UCLA 43	7:18	Iowa State 80 UCLA 56
Mar 24, 2000	Men's College Sweet 16	Tulsa 63 Miami 51	4:19	Tulsa 80 Miami 71
Mar 24, 2000	Men's College Sweet 16	Tulsa 62 Seton Hall 59	0:47	Tulsa 68 Seton Hall 66
Mar 27, 2000	Women's College Elite 8	Tennessee 54 Texas Tech 44	2:34	Tennessee 57 Texas Tech 44
Mar 30, 2000	Men's College NIT Champion	Wake Forest 59 Notre Dame 42	7:13	Wake Forest 71 Notre Dame 61
Mar 31, 2000	Women's College Final 4	Tennessee 54 Rutgers 45	3:30	Tennessee 64 Rutgers 54
Mar 31, 2000	Women's College	Connecticut 71	4:54	Connecticut 89

	Final 4	Penn State 59		Penn State 67
Apr 1, 2000	Men's College Final 4	Michigan State 40 Wisconsin 27	6:00	Michigan State 53 Wisconsin 41
Apr 1, 2000	Men's College Final 4	Florida 66 North Carolina 57	3:20	Florida 71 North Carolina 59
Apr 2, 2000	Women's College NCAA Champion	Connecticut 54 Tennessee 29	12:00	Connecticut 71 Tennessee 52
Apr 3, 2000	Men's College NCAA Champion	Michigan State 76 Florida 60	6:15	Michigan State 89 Florida 76
Jun 3, 2000	Women's Professional	Los Angeles 77 Minnesota 71	2:00	Los Angeles 82 Minnesota 75
Jun 18, 2000	Women's Professional	Los Angeles 64 Charlette 55	3:59	Los Angeles 70 Charlette 62
Jun 19, 2000	Men's Professional NBA Champion	Los Angeles 112 Indiana 109	0:59	Los Angeles 116 Indiana 111

*In a few games the POW was not reached by either team. This is a success from the view point of the fan. From the view point of the coach it isn't very relevant since his team would probably already be providing any needed heroic action. For a complete treatment from the view point of the fan see [How To Determine The Winner Of a Basketball Game](#) which is another article on this web site.