

June 10, 2003

New Jersey Stanley Cup Win 2002/2003 Season— Probability Theory, Winning Percentages and Outcomes

Asked by a New Jersey Devils fan, who was a little despondent after his favorite team lost to the Mighty Ducks of Anaheim at Arrowhead Pond in the sixth game of the series to force a seventh and deciding game back in the NJ “Swamp” (aka, the Continental Airlines Arena), to predict who would win, I confidently told him: “New Jersey will take it.”



*Devils Players Celebrate
(Globe and Mail, June 10, 2003)*

“How can you be so sure?” he asked me. “They looked so tired in Game 6 and thoroughly beaten ... and (goaltender Martin) Brodeur looked so shaky. Maybe the Ducks are a team of destiny.”

Well, here is what I told him:

1. The Devils will win because they have home ice advantage in the 7th game—that is what probability theory tells us (see later on).
2. Also, at home the Devils win more face-offs. This is because the home team center puts his stick down last—he gets to see the strategy of the opposing player; whether he plans to draw forehand or backhand, for example.
3. Face-off wins by the Ducks had been killing NJ in this series. A greater balance for the Devils will give them more puck possession time and this matters a lot to a good defensive team like the Devils.
4. Martin Brodeur is an Olympic gold medal and Stanley Cup winning net minder and experience makes a difference—he will bounce back from a sub-standard performance in Game 6.
5. But the most indicative factor was the home record of the Devils—they are 11 and 1 in the 2002/2003 Playoffs and 3 and 0 in the Cup Final.
6. Professional gamblers* and the odds makers in Los Vegas know very well that you do not *ever* bet against a winning streak ending (or for that matter a losing streak stopping). The Cincinnati Bengals of the NFL have shown that the ‘feeling’ that you have that they can’t possibly lose the next game after already losing so many in a row, can be wrong up to 15 times in a row—you can lose a lot of money that way if you bet on sports*. (I don’t think the Bengals have yet managed to lose all 16 regular season games.
7. The table below calculates the probability of a NJ win at home in the 7th and deciding game. Since the Devils are 11 and 1 at home in the 2002/2003 Stanley Cup Playoffs, their

winning percentage at home is 91.7%. They are also 3 and 0 in the Final Series; so one has to ask, what the chances are that they can win four in a row at home (and, of course, get to hoist the Stanley Cup too)?

8. The chances of winning four in a row is calculated as their winning percentage at home (.917) raised to the power of four—this yields a probability that NJ will win the Cup at home in 2002/2003 to 71%. The Ducks are (obviously) at 29%, so the *odds* of the Devils winning can be calculated as 71/29 or 2.45 to 1. These are pretty good odds and I was right to give comfort to my friend.

10-Jun-03

New Jersey Devils Cup Win 2002/2003 Season-- Probability Theory

	Wins	Losses
Devils Home Playoff Record before the 7th game is played	11	1
Percentages	91.7%	8.3%
Home Record in Final Series before the 7th game is played	3	0
Chances of winning four home games in a row**	71%	
Chances of losing fourth game at home		29%
** This is calculated as .92 to the fourth power.		
Devils Home Playoff Record after the 7th game is played	12	1
Percentages	92.3%	7.7%
Home Record in Final Series before the 7th game is played	3	0
Chances of winning five home games in a row	67%	
Chances of losing fifth game at home		33%

ProbabilityTheoryAndNJDevils

** Please do not interpret anything in this essay as encouraging anyone to be foolish enough to 'invest' their money in gambling on sports (or anything else for that matter).*

ps. Right after they won the Cup, Martin Brodeur told CBC Host Ron MacLean that the toughest part of the Playoffs was actually the 7th game, away-victory over the Ottawa Senators at the Corel Centre in Round 3.

pps. Just for the heck of it, I noted that there is a dynamic element to all this. If these series were say best of 9 games, then if the Devils win Game 4 at home, their winning percentage at home goes up but their chances of winning Game 5 at home (if there was such a thing) actually goes down because their winning percentage is now raised to the power of 5, not 4. This should tell

you that to use a model like this on earlier results requires some understanding of how to use it and, of course, in earlier series or games, one has fewer results and so somewhat less reliable stats to use. Hence, the models predictive power increases as games are played.

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