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Golf 2 man best ball format

As the weather warms up and summer approaches, it means the City Tour season is fast approaching. For the second year in a row, ALL City Tour events will feature a better ball and scramble format. Players will be able to choose between competing in both formats, and the best teams in each format will receive invitations to the City Tour Championship. Why did we add a scramble format last year? It's simple: that's what people wanted. We try to meet all skill levels and abilities, and adding a scramble format has allowed multiple players to participate in City Tour events and spend time. However, not everyone knows exactly what a run or the best ball golf format entails. I wanted to provide a simple explanation as you decide which format you'd like to participate in this summer. For the purposes of this article, both formats will be described with teams of two people. The best ball for two people (also known as fourball in the Ryder Cup) involves teams of 2 where each player on the team plays their own golf ball throughout the round. After each hole the player with the lowest score on the hole (or best ball) outside the 2-person team serves as the team score. The highest-scoring player's score is thrown out for that particular hole. For example, if player A records a 5 and player B records a 6, the team should record a 5 as the best ball score for the hole. Both players should record their individual score for each hole and have a separate line on the scorecard for their best ball score. The best ball format allows players to play their own game (since players keep track of their scores), also allowing them to exploit their partner by playing particularly well on the holes. Scores tend to be a little higher in the better ball than in a run, simply because each player has to play their own shots. If you hit a bad record, you have to play it (and hope your partner is doing better). That doesn't mean there aren't super low scores in a better ball though. The two-person Scramble Scramble format involves teams of 2 where each player on the team hits a tee shot, and then players decide which shot they like the most. The two players then play from that point. The person who fired the shot was not taken collects the ball and moves it within a length of the club from the selected point. Once the place is selected, both players play a shot from that point and choose again which one they like the most. This continues until the hole outside. A couple of rules: they are allowed to place their ball within a length of the club from the selected point (no closer to the hole). Also, players can't change which grass cut their ball is in (i.e. you can't place your ball in the fairway if your marker is raw). Players proceed in a similar way for each shot until they hole. This format is best suited for beginners, like a bad villain you can simply choose to play at your partner's house. The different skill sets work best in scramble golf format and also allow for greater risk-taking. If your partner reaches a short move right in the middle, you can afford to take risks and get away. In the worst case just play your partner's ball in the fairway. At best hit a longer unit and you're in a more advantageous position. ** If you're ready to get to the course, learn how to find local golf tournaments this summer! W.J. Hurley and Tyler Sauerbrei Recreational golf is generally played in foursomes, four golfers who play 18 holes as a group. The most popular betting game among amateur men's foursomes is a net team game with the best ball, in which the quartet is divided into two two-player teams, and the lowest score for a team in a hole is the lowest net score of its team members. This net score is called the best net ball in the team. For example, let's say a team has gross scores of 4 and 5 and corresponding net scores of 3 and 5 (the golfer who got the 4 has a handicap shot, so his net score on the hole is 3). Then the team's best net ball is 3, the lowest of the two net scores. If we think that a golfer's net score on a hole is a random variable, then a better net team ball is the statistic of the minimum order of the two net scores. Typically a game is played over 18 holes based on the net score of the team's best ball per hole (i.e., match play). There are many variants of this game, but its essence is a better ball than the team net. The problem we study is the handicap of team games with the best ball in the net. For example, if a team includes players with handicaps 2 and 12 and other players with 4 and 8 handicaps, how should the game be played to make it fair? There is a universal belief among golfers that we play to make these matches fair, all players should get their full handicap in determining a net better team ball. The purpose of this document is to demonstrate that this conviction is not, in general, true. That is, the use of standard handicaps, handicaps designed for individual competitions, do not translate well into team matches. Sometimes the team's net score in the best ball is used in more substantial matches. For example, in our club (Cataraqui Golf and Country Club, Kingston, ON, Canada), there is a member-host tournament where results are determined with a net better ball than the team. The cost to enter this tournament is $1,000 per team. A part of registration fee is awarded in cash prizes. In addition, there are organized even-mutual bets and side bets between individual teams. We conservatively estimate that there is at least $100,000 at stake. The USGA's position on Team Net Best-Ball The following passage summarizes the United States Golf Association (USGA) view on appropriate adaptations for team competitions with the best ball: when other players join, the USGA the USGA disability allowance to provide equity in other forms of play. A few words of explanation: players with higher handicaps generally produce a wider range of hole-by-hole scores than better and more consistent players. This means that if full handicaps are used and a team can choose its best net score on each hole, the team that get the most hits has a definite advantage. The USGA has designed recommended allowances that must be applied in these circumstances to ensure these games are fair and deny the advantage of players with higher handicaps. The USGA therefore understands that the system of the disabled does not translate well into better ball games. However, it will prove that it is not always true that players with higher handicaps have an advantage. So we'll argue that the USGA's recommendation to make net games with the ball fairer doesn't apply to all possible handicap pairings. A simple example to make the point Suppose two golfers labeled Low and High are playing a game of a hole. Golfer Low is a good player and only gets a par (0 or even par) or a birdie (-1 or 1 below). On the other hand, golfer High is only able to a par, bogey (+1 or one above par), or double-bogey (+2 or two above par). Suppose golfer Low blows golfer Alto. That is, in order to determine who wins, the tall golfer subtracts a shot from the score he gets, and then the two compare the scores to see who wins. Suppose the probabilities of possible outcomes for each player are as specified below: once the tall player subtracts a shot from his score, he can get a birdie, par, or bogey. With these definite probabilities, we can easily understand the probabilities that each of them will win: $Pr(\text{Low Wins}) = pq_1 + 1 - q_0 - q_1$, and $Pr(\text{High Wins}) = (1 - p) q_0$. (1) In order for this match to a hole to be fair, these two must be the same. This requires us to assume that this equality is satisfied and therefore this game is right. Now consider a net team game with the best ball in which teams include two low-handicap golfers (the Low Team) and two high handicap golfers (the High Team). Again, these teams will play a hole. Critically, both high golfers will take a hit off their individual scores in order to calculate the High Team's best net ball. In addition, we assume the independence of individual scores. Using the p, q_0, and q_1 parameters, we can calculate the probabilities of various team results net of the blow that each High Team player gets: This gives the following probabilities of victory: Pr (Low Team wins) = $P_{-1}(Q_0 + Q_1) + P_0Q_1$, and (High Team wins) = P_0Q_{-1}. (3) The probability of a tie is $P_{-1}Q_{-1} + P_0Q_0$. Consider the following instance. That the probability parameters for low and high golfers are $q_0 = 0.40$, $q_1 = 0.40$ and $p = 0.25$. (4) On the basis of these assumptions, a correspondence between a low golfer and a where the tall golfer gets 1 shot is right since every golfer has a 0.3 chance to win (the game is drawn with a probability of 0.4). Now consider what happens in the team game where every tall golfer gets a stroke. We have Pr (Low Team wins) = 0.18, Pr (High Team wins) = 0.36, and the game is drawn with probability 0.46. That is, the high team's probability of winning is twice that of the Lower Team. So, it doesn't follow that the handicaps that make one-on-one matches fair also make net team games best-ball fair. This example is consistent with what the USGA suggests about team games with the best ball, that the team with the highest handicaps has an advantage. However, this is not always the case, as we are going to show with the example in the next section. Another example Consider a team match model with the following assumptions: 1. The course includes 18 identical holes in difficulty. 2. For each hole, a golfer's score is characterized by the following probability distribution: To keep the analysis reasonably simple, other scores such as eagles and triple bogeys are not possible, so that $p_{-1} + p_0 + p_1 + p_2 = 1$. (6) 3. We repair these four probabilities with $\theta = p_{-1} + p_0$, $a = p_0/p_{-1}$, and $b = p_1/p_2$. (7) Based on an analysis of our club's golfers, we set a = b = 5. A golfer's ability is roughly characterized by θ - the higher it is, the more likely the golfer is to be even or better on a hole. Given an θ, a = b = 5, and (6), we can calculate the pi. The latter hypothesis, which a = b = 5, needs some justification. Consider a scratchy golfer. Below we will discuss that such a golfer has an θ = 0.789 when a = b = 5. We can understand pi for such a player: these probabilities are shown in the second column. Based on these odds, we can figure out the expected number of holes a scratchy golfer would expect to record a birdie on 18 holes. We can find the same thing for the wallpaper, bogeyed and double-bogeyed holes. These results are shown in the third column of the table. So our scratch golfer, in one round, should get 2-3 birdies, about 12 pars, 3-4 bogeys and the odd double bogey. In our opinion, this reasonably characterizes the scratch golfers of our club. In addition, we could calculate the number of strokes that this average rounding would require relative to par. To achieve this we calculate $(-1 \cdot p_{-1} + 0 \cdot p_0 + 1 \cdot p_1 + 2 \cdot p_2) \times 18$. In the case of our scratch golfer, his works at 2.06 shots. In other words, he would, on average, score about 2 shots above par on 18 holes. This is reasonable, given the operation of the disability system. Most of the of handicap systems uses the best m of a golfer's last gross scores to achieve a handicap. For example, in Canada and the United States, the top 10 of a golfer's last 20 games are used to get his For this reason, a golfer's average net score should exceed par. In addition, we calculated a lower limit for the pars-birdie ratio on the PGA Tour in the first part of the 2014 season (up to and including the U.S. Open). This limit is $a = p_0/p_{-1} = 3.8$ which is reasonably close to 5. Finally, we maintain that we do not need to estimate a and b precisely given our purpose. We simply want to point out that it is possible that the USGA's suggestion of making net team matches better does not work for all handicap pairings. To make this point we do not need an accurate model of golf scoring generation; we just need it to be reasonable. With these hypotheses, we can calculate a golfer's handicap for a fixed θ as follows. For a given θ, we generated an 18-hole score by drawing from the distribution in (5) 18 times. This leads to an entire measure of a golfer's 18-hole score compared to par. We do this over and over again to generate a round sequence. With this round-in-hand sequence, we generate the golfer's handicap using the USGA formula. The details of the calculation of the handicap are onerous. Readers interested in the precise details of this calculation can consult the Swartz document listed in the Further Readings section. A golfer's handicap changes as more games are added to his scoring record. It is natural, therefore, to think of a golfer's handicap over time as a stochastic process. In Figure 1, we tracked a golfer's handicap advance when θ = 0.647 out of 1,000 shots. Note that the actual handicap (CH, or handicap of the course) varies between 1 and 5. In fact, the average handicap above 100,000 rounds is 3, so let's say that a golfer with θ = 0.647 has an expected course handicap or a real handicap of 3. So, a golfer with a real handicap of 3 will sometimes get to the first tee with a handicap of 5. We couldn't accuse this golfer of being a sandbagger. Inflated handicap is a product of the randomness of golf scores and the nature of handicap calculation. Figure 1. How a golfer's handicap changes θ = 0.647 out of 1,000 rounds To get the relationship between the handicap of the intended course, E [CH], and the skill parameter θ, we performed the simulation described above for values of θ between 0.05 and 0.95. For each value of θ, we used 100,000 simulation iterations to get a value for E[CH]. The results are shown in Figure 2. While it's hard to say from this graph, this curve is slightly nonlinear. Thus, we hypothesized a quadratic relationship between E[CH] and θ, and a regression produced the mounted model $E[CH] = 4{,}234\theta^2 - 27{,}385\theta + 18{,}926$. (8) Statistics R^2 for regression is 0.9980, so the fit is very good. Figure 2. The relationship between the expected course handicap and θ Note that for a given E[CH] we can solve the associated value of θ. Per Per for E[CH] = 3, we get that θ = 0.6477. In the simulation results above, we used θ = 0.647, and the E[CH] was about 3. For a scratch golfer (E[CH] = 0), we have θ = 0.789, and for a bogey golfer (E[CH] = 18), θ = 0.032. Assessing how two teams of best balls would do against each other with the assumptions described above would be difficult analytically. As a result we used a Monte Carlo simulation methodology. In fact, we let one team play another by randomly generating hole results based on the model assumptions described above. Gross scores are generated for each golfer based on the carrier (p_{-1}, p_0, p_1, p_2) for that golfer. Then the net scores are calculated. And with these net scores, we determine who wins the net game with the best ball. To get accurate results, we repeated this calculation for 50,000 18-hole matches. Once we got the results for these 50,000 games, we calculated the percentage of games won by each team and the percentage of time the game is drawn. More specifically, we looked at matches where two scratch golfers (the Low Team) play against a High Team. We looked at four high teams: 1. High Team 6. Both players have handicap 6 (both have E[CH] = 6). 2. High Team 8. Both players have a handicap of 8. 3. High Team 10. Both players have a handicap of 10. 4. High Team 12. Both players have a handicap of 12. In any case (e.g. low team versus high team x for x = 6, 8, 10, 12), we simulated 50,000 matches. The resulting frequencies are summarized in the following table: Note that teams 6, 8 and 10 high have an advantage, but in the game with high team 12, the low team has the advantage. Therefore, contrary to the USGA's position, high-level handicapped people do not always have an advantage over low-disabled people. This example should also make it clear that there is no easy adaptation to the full disadvantages that will make competition fair. For example, the USGA's recommendation that players receive a fixed percentage of their handicaps would not work in general. Summary In this article, our purpose was to show two results: 1. Net best-ball team matches are generally not fair when all golfers are assigned their full handicap; and 2. Adapting to handicaps, as suggested by the USGA, does not always result in fair net ball matches. These results will make up for how to adjust handicaps to make net games fair with the best ball. We looked at a large number of handicap combinations and were unable to find a simple rule to to individual full handicaps to make fair net competition with the best ball. So, in our opinion, the question arises as to whether there are simple adjustments to route handicaps that will make net best-ball competition ever fairer. To say the least, Bingham, D.R. and T.B. Swartz. 2000. Fair handicap in golf. Le Le Statistician 54(3):170-177. 2005 Lewis A. J. Group handicapping and extensive golf competitions. IMA Journal of Management Mathematics 16:151-160. Pollard, Geoff and Graham Pollard. 2010. Four balls best ball 1 (PDF download). Journal of Sports Science and Medicine 9:86-91. 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