

## THE MATHEMATICS OF BACKGAMMON Replies to Opening Rolls - Part I by Chuck Bower



Positions 1-3 offer Black some interesting dilemmas. Does Black send White to the bar or make the 5 -point? What would you do? I have begun a rather exhaustive
study of replies to opening rolls using cubeless rollouts by Expert Backgammon for the PC ${ }^{\text {(Nooal) }}$ both versions 1.6 and 2.1. Although EXBG's level of play has been the subject of debate, those who have looked into the situation believe that comparison between 2 or more options is reliable, as any erroneous plays tend to cancel out. The results of my study of replies to opening rolls assumes this conclusion, but I have no proof of it. Please keep this fact in mind while reading my analysis of the positions.

Position 1 is discussed in at least one 1970's vintage text. I don't remember the author (for his or her sake maybe just as well) but recall that the conclusion was that the hit is correct, but the decision was close. EXBG says that hitting is worth a whopping 17\% advantage ${ }^{\left({ }^{(N o t e 2)}\right.}$ over making the 5 -point (the latter play leaving the players dead even in winning chances). Position 2 is not as clear cut, with hitting better than building by $3.3 \%$.

Position 3 has swung the other way. Although building the 5 -point makes Black a slight underdog, she is still about $6 \%$ better off than if she were to hit. Although it is often dangerous to speculate why one play is better than another (the real reason I say one play is better is because that is what the rollouts tell us!), it appears as though the 16 shots at the Black checker on the bar (as compared to only five shots which $13 / 9 x$ leave in Position 2) more than offset the slightly better builder (on the bar as opposed to on the nine point) and the strength of the checker on the 21-point (compared with both back checkers still sequestered on the 24-point).


Position 4 offers Black another interesting though not as enjoyable of a decision. Here White has opened with the conservative builder plus split play of 13/11, $24 / 23$. Black's 41 shake is far from her best. What would you do here? Three candidate plays come to mind:

1. copy the builder plus split play $(13 / 9,24 / 23)$;
2. double hit $(6 / 2 x / 1 x)$ leaving a blot on the 1 -point, or
3. make the double split play $(24 / 20,24 / 23)$ which you will notice leaves the checker on the 20 -point under the gun. ${ }^{\text {(Nota3) }}$
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| 1994 HOOSIER BACKGAMMON CLUB Gammon Point Standings. <br> HBC Player of the Month for September is Woody Woodworth with 250 gammon points. HBC Player of the Month for October is Woody Woodworth with 258 gammon points. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1) | Chuck Stimming.......... 1816 | Bill Gheen | 229 | Bill Hodes................... 88 | Frank Scott.............. 32 |
| 2) | Butch Meese............... 1541 | Bill Julian. | 215 | Dr. Bob Hill................. 84 | Jill Ferdinand............ 30 |
| 3) | Ellis Bray.................... 1278 | Gabe Stiasny | 210 | Dave Cardwell............. 84 | Jeff Baker................. 20 |
| 4) | Don Woods................ 1259 | Dave Groner. |  | Scott Richardson......... 77 | Jim Dooling.............. 20 |
| 5) | Woody Woodworth...... 1072 | John Brussel. | . 200 | Lara Simsic................. 72 | Donna Susens.......... 20 |
| 6) | Cyrus Mobed................ 788 | Brian Nelson. | 160 | Rick Bieniak................ 70 | Gino Agresti............. 20 |
| 7) | Larry Strommen............ 730 | Rick Reahard | . 154 | Ed Pavilonis................ 70 | J.A. Miller................. 20 |
| 8) | Jan Gurvitz.................. 681 | Steve Perlman | 148 | Craig Hampton............. 68 | John O'Hagan.......... 20 |
| 9) | Jim Curtis..................... 645 | Richard Heinz. | 145 | David Smith................ 64 | Marta Hilworth.......... 16 |
| 10) | Mary Ann Meese.......... 568 | Sean Garber. | 140 | Stu Sherman................ 60 | John Klotz................ 10 |
|  | Kevin McLeaster........... 424 | Jon Stephens | . 140 | Lou Ramer.................... 60 | Bob Cassell............... 10 |
|  | Neil Ezell..................... 412 | Al Faller... | 128 | Lance Jenkins.............. 60 | Jamie Curtis............. 10 |
|  | Mick Dobratz................ 385 | Jon Vietor | 120 | Alan Tavel................... 50 | Krystal Shaffer.......... 10 |
|  | Alan Haas.................... 282 | Chuck Bower | 118 | Andy Palumbo............. 42 | Angie Jones.............. 10 |
|  | Dragan Stevanovic........ 237 | Marilyn Faller.. | 110 | Wendy Kaplan............. 40 | Peg Simsic.............. 10 |

Somewhat surprisingly (to me, having learned the game in the 70's under the tutelage of authors Jacoby, Cooke, Dwek, and Magriel), the double split play edges out the copycat split plus builder by an admittedly meager $3.0 \%$. ${ }^{\text {Note44) }}$ Taking up the rear ( $4 \%$ behind the double split) is the double hit. Note that these results are quite close and it is possible that given EXBG's less than perfect technique, any one of the three could be correct. Go with the play you are comfortable with. Personally, you certainly don't need to twist my arm to talk me out of leaving a loose checker on the 1-point here. For lack of more evidence, we can say the difference between the builder play and coming under the gun here is a matter of style.

Position 5


Position 5 offers a slightly different set of considerations. How would you play 65 here? I had EXBG roll out three candidates: the simple running play (24/13), and two hitting plays ( $13 / 7 x, 13 / 8$ and $13 / 7 x, 6 / 1 x$ ). (One could make arguments for slotting the opponents bar, but I felt this left White too many options. My apologies to the reader if this approach turns out to be best. However, see the comment at the end of this paragraph concerning the 51 response to a 62 opening.) Here the loose hit on the 1 -point ( $13 / 7 \mathrm{x}, 6 / 1 \mathrm{x}$ ) is clearly better according to the rollouts, making Black virtually even money with this choice, compared to a being a $5 \%$ underdog with the $13 / 7 x, 13 / 8$ and almost $10 \%$ behind if she chooses to run. Again at some risk, I conclude that the second hit (on the 1-point) protects the builder on the bar point and makes this move correct while in Position 4 no progress was made anywhere else on the board with the double hit play, leaving it inferior to its competitors. Rollouts of the 51 response to a 62 (24/18, $13 / 11$ ) opening lead to the same conclusion: the double hit is $4 \%$ better than $13 / 7 \mathrm{x}$ and $8 \%$ better than either $24 / 23,13 / 8$ or 24/18.
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|  | September 1st |
| ---: | :--- |
| 1st | Woody Woodworth |
| 2nd | Chuck Stimming |
| 2nd | Cyrus Mobed |
|  | October 3rd |
| 1st | Cyrus Mobed |
| 2nd Woody Woodworth |  |
| 2nd Kevin McLeaster |  |


| September 8th | September 15th |
| :---: | :---: |
| Jan Gurvitz | Don Woods |
| Don Woods | Woody Woodworth |
| --- | Ellis Bray |
| October 6th | October 13th |
| Gabe Stiasny | Butch Meese |
| Mick Dobratz | Woody Woodworth |
| Butch Meese | Chuck Stimming |

September 22nd Ellis Bray
Don Woods Woody Woodworth
October 20th
Woody Woodworth Dave Groner Rick Reahard

September 29th Chuck Stimming Ellis Bray Woody Woodworth October 27th Ellis Bray Kevin McLeaster Larry Strommen

## Backgammon Tournament Schedule



Position 6


Black to play 6-2?
Position 7


Finally let's look at Positions 6 and 7. In both cases, the opponent has opened with a major split., (Noas) Should Black hit (leaving a double direct shot in the home board) or find an alternative. What would you do in the heat of the battle? The rollouts proved inconclusive in both cases. In Position 6, hitting loose on the 5 -point was a mere $2 \%$ better than simply running 24/16 with $24 / 18,13 / 11$ taking up the rear $6 \%$ behind the hit. In Position 7, the major split (24/21) ran a dead heat with the hit ( $6 / 4 x, 24 / 23$ ) with the conservative builder plus minor split ( $13 / 11,24 / 23$ ) lagging $4 \%$ behind. For lack of other evidence, go with your gut feelings.

In conclusion, we cautiously draw some simple rules of thumb which apply to non-doublet ${ }^{\text {Note8) }}$ responses to opponent's opening rolls:

1. hitting on opponent's side of the board and in your own outfield (excepting the bar point) is clearly correct according to EXBG rollouts.
2. Building the 5 -point is better than hitting loose on the bar point. (Note rollouts also indicate that with 42, making the 4 -point is slightly preferable to hitting lose on the bar point. Difference is $2.4 \%$.)
3. Hitting loose on the 5 - and 4 -points is as good or better than other alternatives assuming that rules 1 and 2 can't be applied.
4. Hitting loose on the 1-point is only correct when protecting a blot on your own bar point, and then probably only in conjunction with the double hit.

## Notes

1. Available from Tom Weaver (who is co-author with Tom Johnson); reachable at (214) 692-1234.
2. Note that I use the term percentage advantage loosely here. In fact, EXBG computes cubeless equity, which is the expected value of this position
if played to conclusion with no doubling cube. Cubeless equity is computed as $S+2 \times B+3 \times G-s$ - 2 xb - $3 \times \mathrm{g}$ where $\mathrm{S}, \mathrm{G}, \mathrm{B}(\mathrm{s}, \mathrm{g}, \mathrm{b})$ are Black's chances of WINNING (losing) from the given position. I point out that if no gammons or backgammons occur, then cubeless equity is simply percentage advantage. The results of the rollouts include gammons and backgammons, and strictly speaking should be quoted in terms of cubeless equity. However, it is generally easier to think in terms of percentage advantage, so that is how I have chosen to express it in the text.
3. To the best of my knowledge, Paul Magriel gets credit for this term (see his classic BACKGAMMON, 1976, Quadrangle/New York Times Book Co.). Under the gun refers to a blot in the opponents home board which is aimed at by builders on three or more different points with the opponent on roll and having no checkers on the bar. (Note: If someone else is responsible for coining this term, I offer my apology.)
4. For the statistically inclined, I point out the this is significant at two standard deviations, or the $95 \%$ confidence level.
5. The major split (as defined by Magriel in BACKGAMMON, see footnote 3 above) is the term for moving one of the back checkers to the 20 or 21 point, as opposed to the minor split of starting either the 22 or 23 point.
6. The same conclusions do not necessarily hold for doublets, where often a decision between a hit and two new points must be made. For example, how do you play 11 after your opponent slots the 5 point?


## Postage Rate Going UP HBC Rates Going UP

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## Annotated match <br> Kit Woolsey vs Jeremy Bagai FIBS - 9 Point Match

In February, Kit Woolsey and Jeremy Bagai played a match and then annotated it for FIBS* players so they could see the thought process of the more experienced players. They played a fairly interesting match, logged it, and then annotated it independently. You will see reasons for their plays and cube decisions, as well as their second thoughts upon later analysis which often came to a different conclusion than their original choices.

Gerry Tesauro also volunteered TD-Gammon's valuable help. TD analyzed the whole match and listed its top 3 choices for each play along with its estimated equities. These equities are always assuming a 1 -cube and they do not take into account cube ownership. Thus on a pass-take decision an equity of -0.50 would be a break-even decision (not taking cube ownership into account -- that would probably make it a little higher), since that would translate to an equity of 0.100 on a 2-cube. TD was also nice enough to comment on the game, giving its reasons behind its choices as well as getting in a few snide remarks about their mistakes. Mark Damish (MA), first formatted the commentary for the Internet*.

Internet*: In short, the Internet is a network of computers. People login to an Internet server. Each server has a subset of features which may include email (electronic mail) and server-toserver connections. One of the servers provides a means for players to play each other - FIBS (First Internet Backgammon Server).

Editor's note: I felt that the material was too good to restrict it only to the Internet. I received permission from Kit, Jeremy, Gerry and Mark to reprint the match and I thank them. In the backgammon positions, Kit is the black checkers and Jeremy the white. The board numbers are shown from the player on-roll point of view.

## Game 2 Continues

Kit: Yep, I think you've lost the forest through the trees. The really big swings occur when you hit and cover --
something you are easily willing to do, since the few indirect shots that would leave are far more than compensated for by the increased gammon possibilities, the claiming in the race, and the improved chances of clearing the outer board points safely while I am on the bar. I think this factor far outweighs anything else.

TD-Gammon: Don't look at me. I have Kit's play a slight winner, but by such a small margin that it doesn't prove anything. You guys can fight this one out between you -- I don't want any part of it.

| $18 / 16,18 / 12 \ldots \ldots \ldots \ldots-0.525$ |
| ---: |
| $18 / 10 \ldots \ldots \ldots \ldots . .0 .528$ |
| $18 / 12,3 / 1 \ldots \ldots \ldots . .0 .576$ |



Moved: 10/9x 10/9 3/2 3/2
Kit: Hitting is clearly a must -- Jeremy can't let me go since the race could get close. Having hit, he must put three checkers on the two point since he can't afford to be hit back. $10 / 9 \times / 8,3 / 2(2)$ is possible, but the gaps in the outer board may be too serious. I think Jeremy's play is best, although there could be some problems. He prepares to clear the back point next turn if he can; otherwise he will probably be able to clear some other point.

Jeremy: The alternatives are 8/7(2), $3 / 1$ and $3 / 1(2)$. Clearing the eight point is wrong because it isolates the 10 point. I hit because it looked like making the nine point would help clear all the outside points, but it does allow Kit to enter on my ace or three, and actually creates a point rather than clearing one. I like my play, but I'm not sure by any means.

TD-Gammon: 10/9x/8, 3/2(2) feels a bit smoother to me, but I'm far from sure. What I am sure about, however, is that not hitting would be a big blunder. This race is not gin by a long shot if Jeremy doesn't hit.
$10 / 9 \times / 8,3 / 2(2) \ldots \ldots .+0.550$
$10 / 9(2) x, 3 / 2(2) \ldots \ldots+0.542$
$10 / 9(2) x, 8 / 7(2) \ldots \ldots+0.475$

BLACK (Kit) to play 54?


Moved: B/21 12/7
WHITE (Jeremy) to play 54?


Kit: Holding the blockade with $6 / 1,5 / 1$ would leave a completely stripped position which is very dangerous. Jeremy properly clears the back point, putting some spares on the six and five points to help handle awkward rolls.

Jeremy: Obviously better than making the ace point.

TD-Gammon: Not even in the same league.

| $10 / 6,10 / 5 \ldots \ldots \ldots \ldots+0.549$ |
| ---: |
| $6 / 1,5 / 1 \ldots \ldots \ldots \ldots+0.477$ |
| $10 / 1 \ldots \ldots \ldots \ldots+0.155$ |

BLACK (Kit) to play 62?


Moved: 21/13
Jeremy: better than 21/15, $7 / 5$ simply in that it leaves more cover numbers for the ace point.

TD-Gammon: Back to the technical nonsense. I like bringing the checker home. Who knows or cares (I certainly don't).

| $21 / 15,7 / 5 \ldots \ldots \ldots \ldots-0.543$ |
| ---: |
| $21 / 13 \ldots \ldots \ldots \ldots-0.562$ |
| $21 / 15,3 / 1 \ldots \ldots \ldots . .-0.578$ |



BLACK (Kit) to play 51?


Moved: 7/1
Kit: If I play 13/7 I'll just have to give up the bar point next turn, and if I don't roll a six the ace point will remain uncovered. Making it now gives me 12 free pips to play with before something has to give way.

Jeremy: This is much better than the "clever" 13/7 which creates a prime and allows Kit to play for a second checker. Kit will not need to play for a second checker until I have six or seven checkers off, five or six rolls from now. The main problem is that if he makes his bar point he will just have to break it next roll, and may not be able to make the ace point.

TD-Gammon: Do we need all this discussion to see the obvious - a closed board is a closed board. These guys are just trying to sound intelligent, and they aren't doing a very good job of it.

| 7/1................. -0.597 |
| :---: |
| 13/8, 2/1.............-0.629 |
| 21/15...............-0.636 |



Kit: Jeremy is rushing things. I don't think this is a good idea. My board figures to hold out for one more roll; after that something will probably have to give. After Jeremy's play, 6-1 and 64 leave a direct shot. I think he should play $6 / 3,5 / 1$. Not only is this $100 \%$ safe for next roll but it is smoother and builds a board in case Jeremy needs one in the future.

Jeremy: This leaves a shot on 6-1 and 6-4 and leaves me unhappy on 4-4 while after $6 / 3,5 / 1$ all my rolls play well. Yet I still think my play is best. I want to clear the eight point, and stripping it is the way to do that. It might be right to stall with $6 / 3,5 / 1$ if Kit's board were going to crash next roll, but he has the checker on his midpoint to play with. $8 / 5,6 / 2$ is a blunder, leaving a shot on 6-6 unnecessarily.

TD-Gammon: Ill go along with Kit on this one. 6/3,5/1 seems better on all counts.

| $6 / 3,5 / 1 \ldots \ldots \ldots \ldots+0.608$ |
| ---: |
| $6 / 3,6 / 2 \ldots \ldots \ldots \ldots+0.562$ |
| $8 / 1 \ldots \ldots \ldots \ldots+0.521$ |

BLACK (Kit) to play 22?


Moved: 13/5


Kit: There is no rush to come down to two checkers on the six point with 8/5(2), 6/3(2). That would leave a shot on 6-2, while Jeremy's play is safe for the next roll. I think he can do even better with $8 / 5,8 / 2,3 / 0$. This comes down to four checkers on the six point, so with no cost he can delay the evil day even longer, in the meanwhile taking checkers off and possibly forcing me to either leave with both checkers or lose my board.

Jeremy: There doesn't seem to be any reason to play $8 / 5(2), 6 / 3(2)$ which would leave a shot on 6-2 next roll. 8/5, 8/2, $3 / 0$ might be just as good.

TD-Gammon: My algorithm comes up with the play they say is terrible. Well, I do seem to lose a lot more of these games than I should. Better listen to them on this one. I really don't feel on firm ground here -- the objectives aren't clear to me.

$$
\begin{array}{r}
\hline 8 / 5(2), 6 / 3(2) \ldots \ldots \ldots+0.782 \\
8 / 5(2), 6 / 0 \ldots \ldots \ldots+0.735 \\
8 / 5(2), 6 / 3,5 / 2 \ldots \ldots \ldots+0.734 \\
\hline
\end{array}
$$

BLACK (Kit) to play 54?


Moved: 21/12
Jeremy: Kit sees that breaking his board would hurt both his racing chances and his hitting chances -- and he would probably be forced to leave next roll anyway. He correctly keeps one guy back for annoyance value. There are many two roll sequences where I leave a shot.

TD-Gammon: Breaking a closed board? Not even in the picture.

| $21 / 12 \ldots \ldots \ldots \ldots \ldots-0.798$ |
| ---: |
| $21 / 16,6 / 2 \ldots \ldots \ldots . .0 .839$ |
| $21 / 16,5 / 1 \ldots \ldots \ldots .0 .841$ |

WHITE (Jeremy) to play 65? Moved: 6/0 5/0

BLACK (Kit) to play 41 ?
Moved: 12/7


Kit: Doesn't take anybody off, but leaves a shot only on large doubles. $5 / 1,5 / 0$ would leave a shot on 6-2 next turn as well as large doubles. Next turn is most critical; after that I probably won't be able to hold my board.

Jeremy: If the gammon were a possibility, 5/1, $5 / 0$ might be right. Here the gammon is very unlikely, so clearing the six point is a must.

TD-Gammon: My maker put a new algorithm in to handle positions such as this one, and I come up with $5 / 1,5 / 0$. Their discussions about what will happen on the next roll or two are a little too technical for me, but I guess we might as well bow down to their knowledge here -- they are supposed to be experts at this sort of thing.

## BLACK (Kit) to play 41?

Moved: 7/35/4
WHITE (Jeremy) to play 42?


Jeremy: Not $5 / 3,5 / 1$ which leaves many shots next roll. No reason not to take the checker off.

BLACK (Kit) to play 54?


Moved: 21/12
Kit: There really isn't much point in staying. I won't be getting a shot next roll, and after that not only will my board be crunched but Jeremy will have so many checkers off that I probably can't win even if I hit a shot. In the meantime, there would be the danger of a freak gammon. It isn't worth the risk.

Jeremy: Kit sees that nothing leaves a shot next roll, and runs now to guard against a freak gammon. Seems right.

TD-Gammon: I run also, but I have it very close. Of course, these decisions aren't my forte.

| $21 / 12 \ldots \ldots \ldots \ldots \ldots . .0 .963$ |
| :---: |
| $6 / 1,5 / 1 \ldots \ldots \ldots \ldots . .0 .964$ |
| $6 / 1,6 / 2 \ldots \ldots \ldots \ldots . .0 .973$ |

WHITE (Jeremy) to play 21? Moved: 2/0 1/0

BLACK (Kit) to play 42?
Moved: 12/6
WHITE (Jeremy) to play 62? Moved: 5/0 2/0

BLACK (Kit) to play 51?
Moved: 5/0 1/0
WHITE (Jeremy) to play 64?
Moved: 5/1 5/0
BLACK (Kit) to play 31?
Moved: 3/0 1/0
WHITE (Jeremy) to play 65? Moved: 5/0 3/0

BLACK (Kit) to play $62 ?$
Jeremy Bagai wins 2 points.

| Game 3 |  |
| :---: | :---: |
| Black(Kit) $-2 \quad$ White(Jeremy) -2 |  |

Black (Kit) to play 53?


8/3 6/3
White (Jeremy) to play 21?


Kit: Splitting the back checker with $24 / 23,13 / 11$ or even $24 / 21$ is also reasonable. The split is more effective than usual since my eight point is stripped.

Jeremy: I can't say this play is wrong, but I'm surprised that I made it. I generally like splitting instead of slotting (this is hypermodern opening theory of the 90's -- as opposed to modern opening theory of the 70's and 80's which liked slotting -- as opposed to traditional opening theory of the last millennium which liked splitting). Here, where Kit's eight point is stripped, the ace split has even more going for it. 42 and 3-1 would leave direct shots instead of being Kit's perfecta's. I like 24/23, 13/11 better.

TD-Gammon: Reasonably close, but I like splitting as I usually do.
$24 / 23,13 / 11 \ldots \ldots . . . . . .0 .128$
$13 / 11,6 / 5 \ldots \ldots \ldots \ldots .0 .138$
$24 / 21 \ldots \ldots \ldots \ldots .0 .146$

Black (Kit) to play 54?

| $242322212019$ |  |
| :---: | :---: |
|  |  |
|  |  |
| $\begin{array}{llllll}1 & 2 & 3 & 4 & 5 & 6\end{array}$ | 7889101112 |

24/20x 13/8
Kit: I think this is better than running with $24 / 20 x / 15$. The spare on the eight point is valuable, and I am threatening to make an advanced anchor. In addition, if Jeremy enters and hits I will have a direct shot back at him.

Jeremy: This looks better than $24 / 20 \times / 15$ because it adds a builder to the eight point, starts the defensive anchor, and provokes an exchange of hits while his board is stronger.

TD-Gammon: I'm glad to see you guys have finally learned this play. Everybody used to play $24 / 20 \times / 15$ because they were so scared of the return six which hits. We modernists know that putting checkers where they belong is much more important.


Kit: No choice, even though I have the stronger board. Jeremy must fight for his five point.

Jeremy: The battle for the five points begins. This is much better than $B / 20$, 11/8 which removes a builder and gives Kit his whole roll to attack or consolidate.

TD-Gammon: Closer than you might think, because stripping the eight point is serious. However, the hit is correct.

|  |
| :---: |

Black (Kit) to play 31?


B/22 6/5x
Jeremy: Hitting is clear for it starts his five point and gives me fewer rolls to make mine. Kit's play is miles better than $B / 24,8 / 5 x$ because that puts less pressure on the blot on my five point and strips his eight point.

TD-Gammon: Kit's play is automatic, for all the reasons Jeremy gives.

| $\mathrm{B} / 22,6 / 5 \mathrm{x} \ldots \ldots \ldots .+0.208$ |
| ---: |
| $\mathrm{~B} / 24,8 / 5 \mathrm{x} \ldots \ldots+0.098$ |
| $\mathrm{~B} / 21 \ldots \ldots \ldots \ldots+0.089$ |



Jeremy: Might look a little risky with four loose blots, but there is no alternative that is close. My favorite maxim is, "He who leaves the most blots wins." (It applies often in the opening -- less often in the end-game.)

TD-Gammon: What else is there?

| $B / 23,24 / 20 x \ldots \ldots \ldots . .-0.212$ |
| :---: |
| $B / 21,13 / 11 \ldots \ldots \ldots \ldots .0 .328$ |
| $B / 21,5 / 3 x \ldots \ldots \ldots .0 .363$ |

Black (Kit) to play 31?


B/22 6/5x

Kit: $B / 24,8 / 5 x$ is also reasonable, since it gives me a better balanced offensive structure. A spare on the six point is better than a spare on the eight point, because I will be willing to give up my eight point to cover the blot on the five point while I will not be willing to give up my six point. I decided that locking up an advanced anchor in case of rain was more important.

TD-Gammon: Correct. The advanced anchor makes the difference.

| $\mathrm{B} / 22,6 / 5 \mathrm{x} \ldots \ldots \ldots \ldots+0.060$ |
| ---: |
| $\mathrm{~B} / 24,8 / 5 \mathrm{x} \ldots \ldots \ldots+0.038$ |
| $\mathrm{~B} / 21 \ldots \ldots \ldots \ldots . .0 .019$ |



Jeremy: The double hit $B / 20 x, 5 / 1 x$ is horrible -- passing up the anchor, removing the slot of the five point, and starting the point I least want -- all in the name of a worthless tempo.

TD-Gammon: Not go after the five points? Perish the thought.

| B |  |
| :---: | :---: |
|  |  |
|  |  |

Black (Kit) to play 65 ?

$B / 20 x / 14 x$
White (Jeremy) to plays 43 ? B/21 Dance

Black (Kit) to play 11?


8/7 8/7 8/6
Kit: This is the best offensive play. The problem is that the offense has nowhere to go, since Jeremy owns my five point and I have no ammunition in position. I think I should have taken this opportunity to guarantee the strongest anchor and played 22/20(2).

Jeremy: I think this is an oversight. Sure the bar point is better than the eight point -- usually. But since I'm anchored on his five point, Kit isn't going to be doing any priming or attacking. Whether he likes it or not, this is going to be a mutual holding game and long-term flexibility is the key. Kit should play 22/20(2), ensuring that nothing bad happens to him for a long, long while. My guess is that there is a significant equity difference between the two plays.

TD-Gammon: You guys have it analyzed quite well. Moving the back checkers is a must. Kit's actual play is a very costly blunder.
$21 / 20(2) \ldots \ldots \ldots \ldots+0.199$
$24 / 23,22 / 20,14 / 13 \ldots \ldots+0.183$
$22 / 21,22 / 20,14 / 13 \ldots \ldots+0.183$
$8 / 7(2), 8 / 6 \ldots \ldots \ldots+0.063$

White (Jeremy) to play 53?


Kit: Certainly best, particularly since the checker on the ten point isn't in direct range of any shooters. $B / 20$, $23 / 20$ is too inflexible.

Jeremy: Yes. Kit has no ammunition for an attack and I want some offensive points. B/20, 23/20 would be a waste.

TD-Gammon: Once again, the boys are right on target.

| $B / 20,13 / 10 \ldots \ldots \ldots \ldots-0.124$ |
| ---: |
| $B / 17 \ldots \ldots \ldots \ldots . .0 .148$ |
| $B / 20,23 / 20 \ldots \ldots \ldots .0 .162$ |

Black (Kit) to play 51?


13/7
Kit: It's hard to find much else. At least this puts a valuable builder in place on the bar point.

Jeremy: I don't see anything better.
TD-Gammon: The best play is not at all obvious. The key is that Kit is so far ahead in the race that holding an anchor in Jeremy's board, particularly an anchor as deep as the three point, is not consistent with his game plan. He should be attempting to get everyone home, flooding the outfield before Jeremy has an opportunity to untangle his mess in Kit's board. For that reason $22 / 16$ is the winner, despite all the shots it leaves. Just think thematically, and this type of play will pop out. You could tell by the comments that neither Jeremy or Kit were particularly satisfied with their choice, since they knew it wasn't what one should be trying to do in the position. They just couldn't find anything else. Admittedly the plays are close, since running out does leave a lot of shots.


Kit: Looks best. Jeremy sends another one of my checkers back, extricates two of his back checkers, and prepares to make a strong blockade in his outer
board. 20/5, 10/5 is possible since the five point is so valuable, but Jeremy's play looks better to me since it does so many good things. Note that $21 / 11 x$, $6 / 1(2) x$ would be very bad. He would pay a serious long term price of having two checkers out of play in what figures to be a long positional struggle for the short term gain of seeing me have two checkers on the bar. Flexibility and keeping checkers in play are the watchwords for this type of position.

Jeremy: The alternative is making the five point, which looks slightly better to me now. Any play involving the ace point is very wrong -- Kit has graciously allowed me to keep my checkers in front of his anchor, and I must be accomodating.

TD-Gammon: Jeremy should have stuck with his original choice -- it is best. Making the five point is just a bit too cramped, and hitting Kit's outfield checker is valuable. They are both correct that anything involving the ace point is awful. It is vital to keep checkers in front of the enemy anchor if at all possible.
$21 / 11 x, 20 / 10 \ldots \ldots \ldots+0.155$
$20 / 5,10 / 5 \ldots \ldots \ldots+0.122$
$21 / 11,20 / 15(2) \ldots \ldots+0.040$
...continues next issue...


