

**Hoosier
Backgammon
Club**

Mar-Apr 1995
Volume XII, No. 1



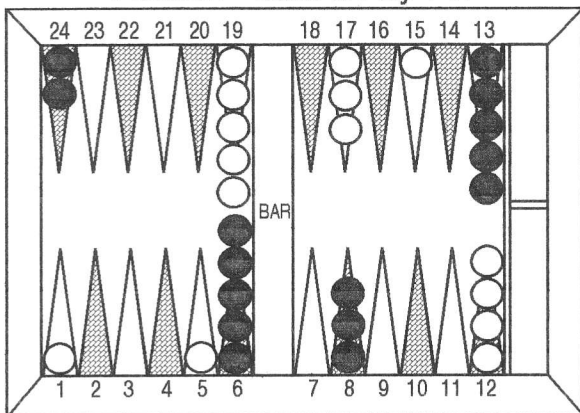
HBC Awards Tournament Sunday, February 19th at SPATS.

The **Top 10 of 1994** were awarded engraved doubling cubes plus \$250 in cash and **SPATS** certificates. Many kind words were provided by the Master of Ceremony, *Chuck Stimming*.

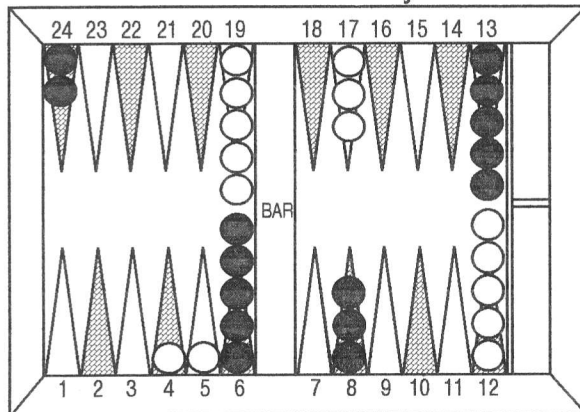
<u>Open Division (11)</u>	<u>Advanced Division (12)</u>
1st... <i>Don Woods</i>	1st... <i>Jan Gurvitz</i>
2nd... <i>Chuck Bower</i>	2nd... <i>Neil Ezell</i>

The Mathematics of Backgammon
Best Replies to 43 Openings
by Chuck Bower

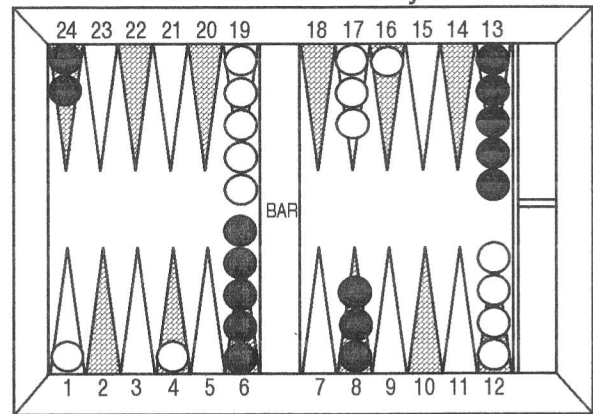
Position 1 - Black to Play 4-1?



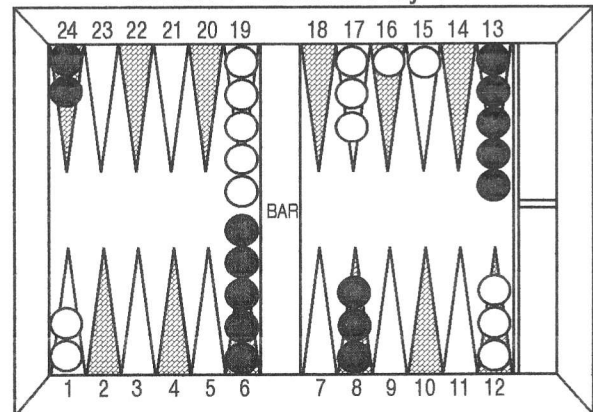
Position 2 - Black to Play 4-1?



Position 3 - Black to Play 4-1?



Position 4 - Black to Play 4-1?



In Positions 1-4, you are asked to play 41 after your opponent has opened with 43. What is your best play in each position? Actually, there is no simple answer to this question. In the first place, it depends on how your opponent will respond to your play. For example, it is no secret that bold play is called for against a timid opponent. (Bold play may also be called for against an aggressive opponent, but more caution should be practiced.)

Secondly, it is difficult to evaluate the relative merits of various outcomes. It should be clear that being sent to the bar is worse than being left alone, but how do you weigh the risks of getting sent to the bar (if the roll doesn't go your way) as compared to the reward of making an inner board point (which may not have been an option if you had played more cautiously). Until recently, people depended upon limited experience and "feel".

With the availability of recent computer software and fast, inexpensive hardware, quantitative evidence has emerged. Table 1 (page 4) is the result of 1.2 million rollouts (taking 70 days of computer time!) using **Expert Backgammon (EXBG)** ver 2.1 for the PC^(Note 1). I have attempted to include as many *reasonable* responses as time would allow. I apologize if your favorite response is not among the candidates. (If you have candidate plays you would like EXBG to roll out, ...continues Page 3...

Hoosier Backgammon Club's Newsletter for HBC members and subscribers.

Subscription rate: \$12/year (Canada \$14 and overseas \$16). Let us know if your address changes.

Butch & Mary Ann Meese: (317) 845-8435. 7620 Kilmer Lane, Indianapolis, IN 46256-1634 E-Mail: butch@inuxs.att.com

1995 HOOSIER BACKGAMMON CLUB Gammon Point Standings.

HBC Player of the Month for **January** was **Gabe Stiasny** with 202 gammon points.
 HBC Player of the Month for **February** was **Don Woods** with 278 gammon points.

1)	Dave Groner.....	398	Chuck Bower.....	144	Bill Hodes.....	40
2)	Don Woods.....	336	Kevin McLeaster.....	120	Reggie Porter.....	32
T3)	Gabe Stiasny.....	286	Neil Ezell.....	116	Bob Cassell.....	20
T3)	Butch Meese.....	286	Rick Reahard.....	110	Peter Kalba.....	20
5)	Ellis Bray.....	260	J.A. Miller.....	80	Richard Heinz.....	16
6)	Jan Gurvitz.....	258	Sean Garber.....	80	Lance Jenkins.....	16
7)	Mick Dobratz.....	200	Wendy Kaplan.....	60	Elijah Miller.....	16
8)	Mary Ann Meese.....	170	Woody Woodworth.....	60	Stan Gurvitz.....	16
9)	Larry Strommen.....	150	Scott Richardson.....	48	Paul Ruteman.....	10
10)	Chuck Stimming.....	144	Brian Nelson.....	48		

Why the name: JellyFish?

Question: Why the name JellyFish?
Answer (Fredrik Dahl): *Well, it started as a joke. Really, a friend of mine was shocked that it could play good backgammon with so few braincells, and so I named it after the very primitive jellyfish.*
*Second, there are all too many programs named **super pro backgammon**, so I wanted a different name that people would remember.*
Thirdly, I liked the sound of it!!

Hoosier Pips: Visitors to HBC during February were J.A. Miller, Paul Ruteman, Elijah Miller and Reggie Porter of the Chicago area. They played on Thursday, February 16th on their way to **Pittsburgh Backgammon Championships** and on Sunday, February 19th on the way home from the tournament...*Hoosiers winning at the Nevada State: Wendy Kaplan* cashed in the Limited \$1000 Jackpot, **Mary Ann Meese** finished 2nd in the \$25 Blitz Event and **Butch Meese** won the Combined Last Chance.

JellyFish

Backgammon Program for the PC

Tutor 1.0...US\$ 110
Analyzer 1.0...US\$ 220

Both versions are now available. The **Analyzer**, in addition to the **Tutor's** features, contains a rollout module. If you own the **Tutor**, the **Analyzer** may be purchased for the difference in price.

Minimum hardware requirements: **386sx**
 Software requirements: **Windows 3.1**
 The **JellyFish** programs come on 3.5" diskettes.
US technical support available.

Order throught **HBC: (317) 845-8435**

	<u>January 5th</u>	<u>January 9th</u>	<u>January 12th</u>	<u>January 19th</u>	<u>January 26th</u>
1st	Mick Dobratz	Dave Groner	Mick Dobratz	Rick Reahard	Kevin McLeaster
2nd	Gabe Stiasny	Butch Meese	Gabe Stiasny	Gabe Stiasny	Ellis Bray
2nd	Butch Meese	...	Ellis Bray	Butch Meese	Don Woods
	<u>February 2nd</u>	<u>February 6th</u>	<u>February 9th</u>	<u>February 16th</u>	<u>February 23rd</u>
1st	Mary Ann Meese	Woody Woodworth	Dave Groner	Dave Groner	Larry Strommen
2nd	Don Woods	---	Don Woods	Reggie Porter	Dave Groner
2nd	---	---	Ellis Bray	Gabe Stiasny	Chuck Stimming
HQ	...	...	...	J. A. Miller	...

Backgammon Tournament Schedule

Mar 24-26.....	1995 Midwest Championships, Marriott Hotel, Oak Brook, Illinois.....	(312) 338-6380
Ma29-Ap02...	Vermont State Backgammon & Ski Festival, Stratton Mountain Inn, Vermont.....	(305) 527-4033
Apr 19-23.....	4th Tournament of Americas, Herradura Hotel, San Jose, Costa Rica.....	(312) 252-7755
Apr 28-30.....	New England Championships, Oak & Spruce Center, South Lee, Mass.....	(603) 853 4711
Apr 28-30.....	Spring Gran Prix, Embassy Suites Hotel, La Jolla, California.....	(619) 294-2007
May 26-29.....	16th Chicago Open, Woodfield Hyatt Regency Hotel, Schaumburg, Illinois.....	(708) 674-0120
Jun30-Jul03..	Michigan Summer Championships, Novi Hilton, Novi, MI.....	(810) 232-9731
Sep 01-04.....	43rd INDIANA OPEN, Ramada Inn East, Indianapolis.....	(317) 845-8435
Thursdays.....	7:00 PM at SPATS (842-3465) Castleton Square (between J.C.Penney's & L.S.Ayres)...	845-8435

...continues from Page 1...

please write me c/o this newsletter.) In addition, I have queried EXBG as to how it would respond and indicated its choice with a capital E next to its choice. (Note that in a rollout, I do not allow EXBG to make its own choice but force it to make the candidate play. After that, though, it chooses its own plays.)

Let's use Table 1 to gain incite as to the "correct" plays in Positions 1-4 above. In Position 1, your opponent played (24/20, 13/10) with the opening 43. In Table 1A, go down until you find the 41 roll. I have rolled out four candidate plays (listed in column 2). Column 3 is black's cubeless equity^(Note2), a term which should be familiar to readers of this newsletter. I have listed the four candidates in order of the rollout results from "best" to "worst". Note that the hit and split option appears best. The double hit and the hit plus builder follow with the minor split plus builder bringing up the rear. The fourth column Table 1 is "relative merit" which is a statistical indicator of how the randomness of the dice in the rollouts affects the results. (More rollout games lead to less randomness.) The "relative merit" is the probability that an extremely large rollout (say one trillion games for each candidate) would lead to the "worse" candidate play being better than the one listed in the table as best by a "b" in the Relative Merit column. In our example of how to play 41 in response to (24/20, 13/10) opening, there is only a 2% chance that more rollouts would lead us to the conclusion that the double hit (6/5x/1x) has a higher equity than the hit and split. There is less than 0.5% chance that the 13/9, 6/5x play is "better" than the hit and split and likewise less than 0.5% chance that the minor split plus builder play (13/9, 24/23) is better than (24/20, 6/5x). (Note that the table says "0%" while the text says "less than 0.5%" as I have rounded to the nearest whole percent in the table.)

What about Position 2? Your opponent has performed the double major back split (24/20, 24/21) to your 5 and 4 points. In Table 1B, you find four plays: #1) (24/20, 6/5x), #2) (8/4x, 6/5x), #3) (24/20, 24/23) and #4) (6/4x, 24/23). Note that although the rollouts indicate (24/20, 6/5x) as best of the four, move (8/4x, 6/5x) is quite close in equity (-0.084 compared with -0.075 for the "best" play). Column 4 shows that the fickle dice are at work and that there is a 34% chance that more rollouts would lead to a higher equity for the double hit. This is large enough that we can treat the leading two candidates as equal. Failing to hit seems to be a mistake with only a 4% chance that it is better than the hit plus major split, while hitting only on the 4-point (with 24/23) comes out worst of all.

I leave the solution of Position 3 for the reader to look up in the table. I point out that some of the replies (for example, 11 response to opening (24/20, 13/10)) were not rolled out. In these cases, both EXBG and I agreed on the "best" play and either I saw no reasonable alternatives or the position was similar enough to other replies which had been rolled out that I chose to use the computer time for other less clear propositions.

Data for Position 4 is not included in Table 1. Rollout results indicate that coming under the gun (24/20, 24/23) (cubeless equity = -0.121) is better than (13/9, 24/23) (cubeless equity = -0.156) with relative merit of 3%. I

point out that opener's reply to the (24/20, 24/23) response is more difficult. For example, EXBG chooses to hit loose on the 5-point and split with both 61 and 21 while "button-up" plays (24/18, 10/9) and (24/22, 10/9) might be better. EXBG exhibits the axiom when in doubt, hit!

Table 1 can be used to provide incite as to the "correct" way of playing the opening 43 against an unknown opponent. By having EXBG roll out the various 43 openings and then adjusting these results for the "correct" replies (as found in Table 1), a new equity for the opening play is found (see Table 2). Note from Table 2 that before adjusting for the "correct" replies, the (24/20, 24/21) and (13/9, 24/21) candidates were nearly equal in equity: +0.022 versus +0.020 for the opener. The (24/20, 13/10) opening was about 0.013 worse than its competing split plays. The double builder (13/9, 13/10) was further behind. However, after forcing EXBG to make the "correct" responses to the "best" three candidate openings, the (13/9, 24/21) moved into first place with both the (24/20, 13/10) and (24/20, 24/21) close behind (opener's equities were +0.008, +0.005, and +0.004; a photo finish!).

Table 2

Opening Candidate	Rollout Equity	Relative Merit	Adjusted Equity	Adjusted Rel. Merit
13/9, 24/21	0.020	42%	0.008	b
24/20, 13/10	0.008	8%	0.005	38%
24/20, 24/21	0.022	b	0.004	28%
13/9, 13/10	-0.009	0%	(none)	5%

Note that the rollout equities in column 2 of Table 2 could not increase since either EXBG made the correct reply or a better reply was available leading to the responder's equity improving and equivalently the opener's equity dropping. Likewise, looking at the replies to the (13/9, 13/10) cannot improve its equity of -0.009 and will most likely decrease it.

In closing, I make my usual "disclaimer" as to believing the results of computer rollouts. (This explains the reason for my putting the words "best" and "correct" in quotes throughout the article.) What I have shown (convincingly?) are the best ways to respond to various opening 43 candidates IF EXBG WERE YOUR OPPONENT. With a different opponent, the equities for the various replies are going to be different (in some cases). But without better evidence (for example TD-Gammon rollouts, Jellyfish rollouts, and/or THOUSANDS of human rollouts), I feel that the results presented in Tables 1 and 2 should be given serious consideration.

(Note1) Written by Tom Johnson and Tom Weaver. Information can be obtained from Tom Weaver of Dallas at (214) 692-1234 or on the Internet email: tomweave@netcom.com.

(Note2) Cubeless equity is calculated from cubeless rollouts as $E = S+2G+3B-s-2g-3b$ where S,G,B (s,g,b) are the percentage of games won (lost) as simple games, gammons, and backgammons. In positions where no gammons or backgammons occur, cubeless equity is equivalent to winning fraction.

Table 1A
Opening Play of 24-20, 13-10

reply roll	candidate play	cubeless equity	relative merit
11	5x(2), 7(2)	...	...
21E	24/22, 6/5x	-0.087	b
21	13/11, 6/5x	-0.091	42% b
21	24/21	-0.156	0%
31	5x(2)	...	...
41E	24/20, 6/5x	-0.055	b
41	6/5x/1x	-0.103	2%
41	13/9, 6/5x	-0.118	0%
41	13/9, 24/23	-0.195	0%
51E	13/8, 6/5x	-0.065	b
51	13/8, 24/23	-0.163	0%
61	7(2)	...	...
22	4(2), 11(2)	+0.023	b
22E	20(2)	+0.015	32% b
32	8/5x, 13/11	-0.103	b
32E	8/5x, 24/22	-0.114	28% b
42	4(2)	...	...
52	13/8, 24/22	...	...
62E	13/5x	-0.077	b
62	24/16	-0.109	6%
62	24/18, 13/11	-0.145	0%
33	5x(2), 3(2)	...	...
43E	24/20, 8/5x (old)	-0.11	b
43	8/5x/1x (old)	-0.175	0%
43	13/9, 8/5x (old)	-0.182	0%
53E	13/5x	-0.077	b
53	13/8, 24/21	-0.09	23% b
53	24/16	-0.106	6%
53	3(2)	-0.148	0%
63E	24/15x (old)	+0.1	b
63	13/7, 8/5x (old)	-0.238	0%
44	13/5x(2)	...	...
54	24/15x	...	...
64	24/14	...	...
55	3(2), 1(2)x	+0.05	b
55E	13/3(2)	-0.036	0%
65	24/13	...	...
66	18(2), 7(2)	...	...

Table 1B
Opening Play of 24-20, 24-21

reply roll	candidate play	cubeless equity	relative merit
11	6/5x/4x(2)	+0.254	b
11E	6/5x(2), 6/4x	+0.22	3%
21	6/4x, 6/5x	-0.074	b
21	6/4x, 24/23	-0.085	29%
21	24/21	-0.085	29%

Table 1C
Opening Play of 13-9, 24-21

reply roll	candidate play	cubeless equity	relative merit
11	6/4x(2)	+0.144	b
11E	6/5(2), 6/4x	+0.122	13% b
21E	6/4x, 24/23	-0.116	b
21	24/21	-0.137	14% b
21	13/11, 24/23	-0.172	0%
31	5(2)	...	...
41	24/20, 24/23	-0.105	b
41E	8/4x, 24/23	-0.142	7%
51	13/8, 24/23	...	...
61	7(2)	...	...
22E	4x(2), 11(2)	+0.247	b
22	4x(2), 24/22, 13/11	+0.246	48% b
22	4x(2), 24/20	+0.224	11%
22	4x(2), 22(2)	+0.223	9%
32E	24/21, 6/4x	-0.07	b
32	24/21, 13/11	-0.124	2%
32	24/21, 24/22	-0.148	0%
42	4x(2)	...	...
52	13/8, 6/4x	-0.078	b
52E	13/8, 24/22	-0.155	0%
52	13/8, 13/11	-0.167	0%
62	24/16x	...	...
33	21(2), 10(2)	...	...
43E	8/4x, 24/21	-0.118	b
43	24/20, 24/21	-0.138	14% b
53	24/15	...	...
63E	13/4x	-0.106	b
44	24/16x, 4x(2)	-0.117	28% b
54E	13/8, 24/20	-0.078	b
54	24/15	-0.106	6%
54	13/4x	-0.117	2%
64	24/14	-0.102	b
64E	24/18, 8/4x	-0.151	0%
64	24/18, 24/20	-0.189	0%
55	3(2), 1(2)x	+0.055	b
55E	13/3(2)	-0.018	0%
65	24/13	...	...
66	18(2), 7(2)	...	...

**Annotated match
Kit Woolsey vs Jeremy Bagai
FIBS - 9 Point Match**

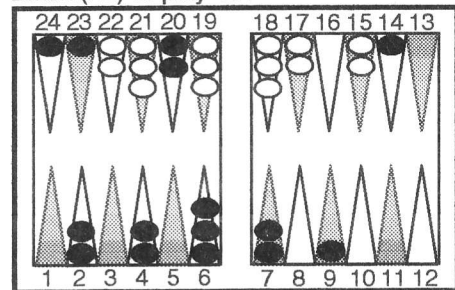
In February 1994, **Kit Woolsey** and **Jeremy Bagai** played a match and then annotated it for FIBS* players so they could see the thought process of the more experienced players. They played a fairly interesting match, logged it, and then annotated it independently. You will see reasons for their plays 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.

*FIBS (First Internet Backgammon Server).

Game 3 Continues

Black (Kit) to play 43?



7/3 6/3

Kit: This is a pretty dangerous play. My idea is to keep open the chances of making a second anchor in Jeremy's board, which will improve my winning chances. On the downside I am taking a big gammon risk. Jeremy has four builders aimed at the two point and three aimed at the ace point, which means he has plenty of pointing numbers. If he makes one of these points and I don't enter immediately he is likely to be able to continue the attack and gammon me. In retrospect I think I should have played the conservative 24/20, 23/20. This obviously decreases my chances of hitting a shot, but I will still have some

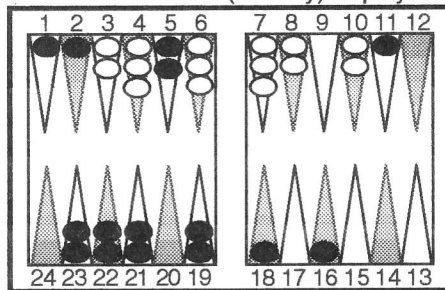
possibilities from the defensive five point. More important, after this play I am almost certain to get off the gammon. It looks as though discretion is the better part of valor on this one.

Jeremy: This is a tough play. Kit's blot on my two point is as much a target for my four builders as anything else, so there is much to be said for moving it up. Kit doesn't want to be on the bar when I'm clearing my ten point. If he doesn't move a back checker, there is still the choice between his play and 14/11, 9/5 which starts the more valuable point. Of those two I prefer Kit's play, making the three point, but it's close. I actually prefer 23/20, 9/5 but am not sure about it at all.

TD-Gammon: Jeremy hit the jackpot. A little try to win the game by getting a shot without going crazy. Kit's actual play is too risky, and his suggested play too cowardly.

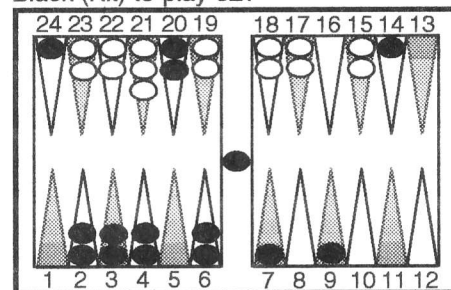
23/20, 9/5.....	-0.863
23/20, 14/10.....	-0.895
24/20, 23/20.....	-0.899
7/3, 6/3.....	-0.915

White (Jeremy) to play 54?



7/2x 6/2

Black (Kit) to play 52?



B/20 7/5

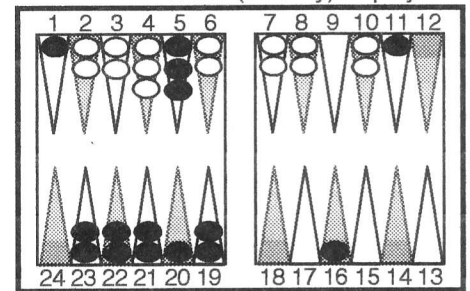
Kit: Even though I might be getting some kind of shot shortly, it is definitely correct to slot the five point. I must have this point if I am going to contain any checker I hit, and the fastest way to make a point is to slot it.

TD-Gammon: Personally I prefer locking up the bar point, particularly since Kit is short on builders with which to make the five point. However we are getting into that awful technical area where my experience and knowledge is somewhat

limited.

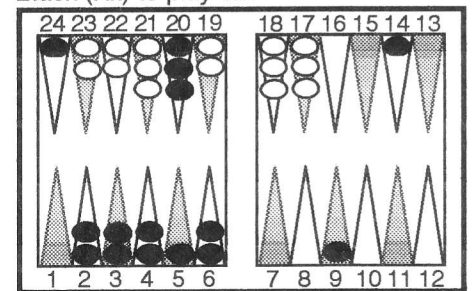
B/20, 9/7.....	-0.866
B/20, 7/5.....	-0.887
B/20, 14/12.....	-0.914

White (Jeremy) to play 32?



10/7 10/8

Black (Kit) to play 52?



20/13

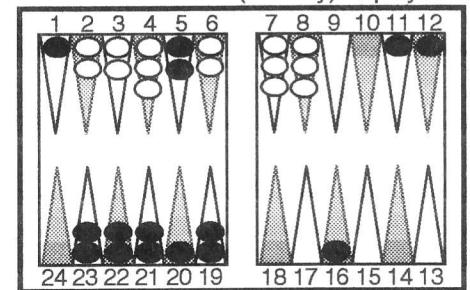
Kit: 14/7 brings another builder into position for the five point, but I would be embarrassed if I rolled 3-3 next turn. Springing one of the back checkers looks better. 20/15, 14/12 is equally good.

Jeremy: Kit doesn't play the more natural 14/7, bringing in another builder for the five point, because he is afraid of a subsequent 3-3.

TD-Gammon: My algorithm says 14/12, 9/4 and doesn't even have Kit's move in the top three, but that play really does look pretty silly. I think we'll have to forget anything I came up with on this position. Back to the middle game, anyone?

14/12, 9/4.....	-0.913
20/15, 9/7.....	-0.932
14/7.....	-0.940

White (Jeremy) to play 63?



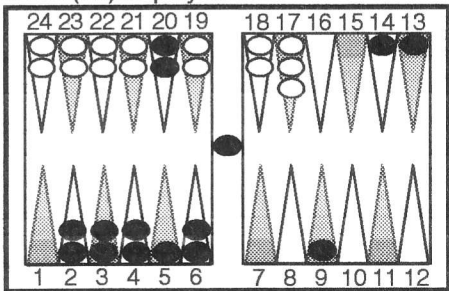
7/1x 4/1

Jeremy: There are good arguments for 8/2, 7/4. Nothing forces a shot next roll; I prepare to clear my outside point. However, I still think making the ace point is better. I'll want to make it sometime, it slows Kit from filling in his five point, and with three checkers outside and one up on a five point board there is the looming spectre of the gammon.

TD-Gammon: There are no arguments for not making the ace point. It is head and shoulders above anything else.

7/1x, 4/1.....	+1.199
8/2, 4/1x.....	+0.797
8/2, 7/4.....	+ 0.794

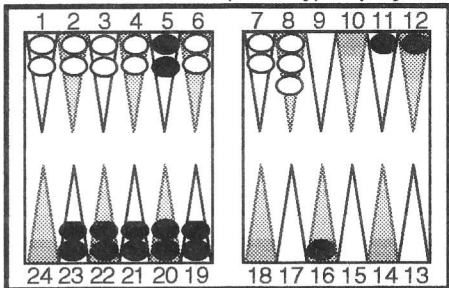
Black (Kit) to play 55?



B/5

Jeremy: Oh well.

White (Jeremy) to play 63?



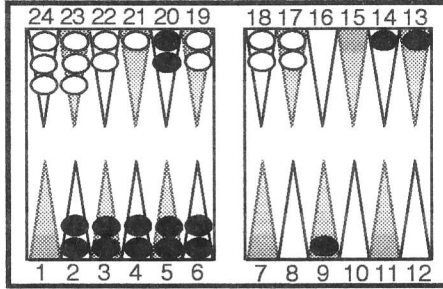
8/2 4/1

Jeremy: Much better than 7/4, 7/1 which leaves a gap and an odd checker on my outside point. Much, much better than volunteering a shot against Kit's perfect board. Busting my inner board is irrelevant -- I have no intention of hitting any more of Kit's checkers.

TD-Gammon: I'm embarrassed to say that I have 7/4, 7/1 as much better. A point cleared, I learned. I never was very good at bearing in against those damn anchors anyway, so don't put too much stock in what I say here.

7/4, 7/1.....	+0.777
8/2, 4/1.....	+0.680
8/2, 7/4.....	+0.372

Black (Kit) to play 44?



14/6 13/5

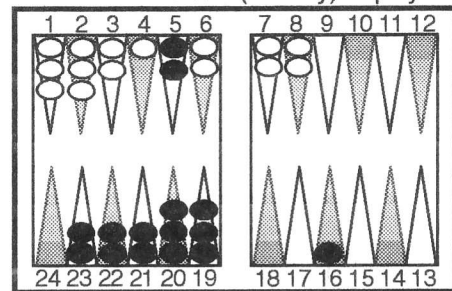
Kit: I don't think it is correct to slot the ace point here. I might be getting a shot in a couple of rolls, and I may not be able to cover the blot in time. Unlike the five point, which was a must, it is not vital for me to make my ace point in order to win the game.

Jeremy: Kit sees that his best winning chances involve hitting a shot the roll after next, so he avoids slotting his ace point for fear that he won't cover it with the one builder he would have for the job. I think I would slot, but don't have a strong feeling about it.

TD-Gammon: I'm a slotter also, but it's close.

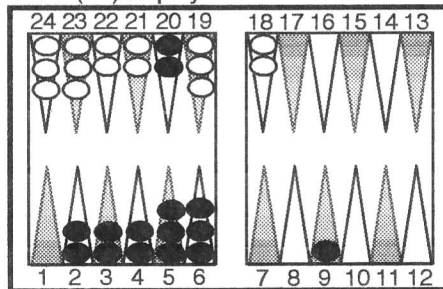
13/1, 9/5.....	-0.729
14/6, 9/1.....	-0.740
14/6, 9/5, 6/2.....	-0.740
14/6, 13/5.....	-0.741

White (Jeremy) to play 42?



8/4 8/6

Black (Kit) to play 53?



9/1

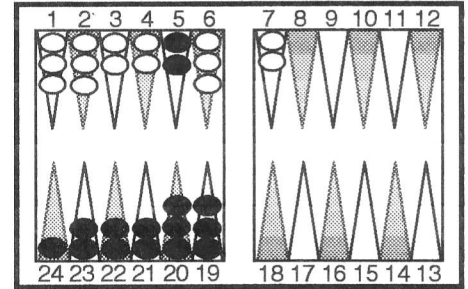
Kit: Now the slot seems correct, with two builders in position and the alternatives possibly leading to uncomfortable followups.

Jeremy: Now he slots. Now I wouldn't, considering that I have four blot numbers coming up (6-6, 5-5, and 6-2).

TD-Gammon: I'm with Jeremy again, but I agree that it is pretty close.

9/4, 6/3.....	-0.768
9/1.....	-0.779
9/4, 5/2.....	-0.786

White (Jeremy) to play 33?



7/4(2) 3/0(2)

Kit: This is a classic double jeopardy situation. After Jeremy's play he leaves a shot only on 6-5 next turn, while if he plays 7/4(2), 6/0 he would leave a shot on 6-1 or 5-1. The problem with his play is that unless he rolls doubles next turn he will have to come down to two checkers on the six point in order to clear it, in which case he will be subjecting himself to the 6-1 or 5-1 problem next roll as well as facing the 6-5 danger now. Consequently, Jeremy's play is more likely to leave a shot in the long run, even though it is safest for now. There may be other circumstances which favor his play. He takes two checkers off, but that really isn't important. If I hit a shot I will be able to claim with the cube regardless of the extra checker off, and he is extremely unlikely to win a gammon, so the extra checker off doesn't figure to matter. If I were going to be forced to break my board or leave with my last back checker then concentrating on only the next roll could be right, but that is not the case here. I think he should have played 7/4(2), 6/0.

Jeremy: I think this is wrong and I should play 7/4(2), 6/0. It's a classic position called double jeopardy: My original play leaves a shot only on 6-5 while the play I advocate now leaves shots on both 6-1 and 5-1. The catch is that my original play risks the 6-5 now and most likely risks the 6-1 and 5-1 later anyway, whereas stripping the six point now gets the matter over with and is comparatively safer. The exception to this comes when Kit may be forced off the five point on the next roll. Then I should care about safety for the next roll only, because those future shots may come after Kit has left. In the actual position I got confused and thought that Kit would be forced to leave with a six --

not realizing that he would leave one checker behind.

TD-Gammon: I also come down to two checkers on the six point. Admittedly I don't understand all this high-class talk about double jeopardy, counting shots next roll, and all that stuff. Isn't it right to just make the thematic play?

7/4(2), 6/0.....	+0.926
7/4(2), 6/3, 4/1.....	+0.909
7/4(2), 3/0(2).....	+0.889

Black (Kit) plays 20/12 with 62.

White (Jeremy) plays 65 with 6/0 6/1.
Jeremy: Justice?

Black (Kit) plays 20/11 with 54.

Kit: There is no reason for staying, since that would just give Jeremy the option of putting me on the bar if he wanted to. He was almost punished for his double jeopardy play, but I failed to hit the shot.

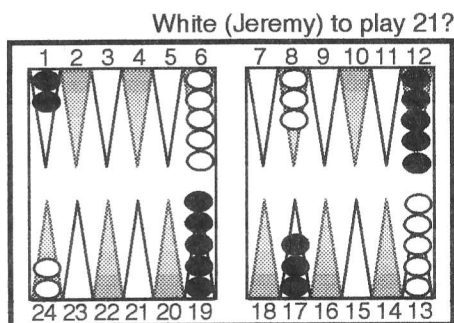
Jeremy: No justice.

TD-Gammon: My algorithm says to stay. I just can't seem to work out the logic correctly here. Don't believe what I say in end-games.

12/3.....	-0.970
12/8, 6/1.....	-0.970
12/7, 5/1.....	-0.971

- White (Jeremy) plays 6/0 with 51.
- Black (Kit) plays 12/6 11/9 with 22.
- White (Jeremy) plays 4/1 4/0 with 63.
- Black (Kit) plays 9/4 3/0 with 53.
- White (Jeremy) plays 4/0 2/0 with 62.
- Black (Kit) plays 6/0 1/0 with 61.
- White (Jeremy) plays 4/0 2/0 with 63.
- Black (Kit) concede with 54?
- Jeremy Bagai wins 2 points.

Game 4
Black(Kit) - 2 White(Jeremy) - 4

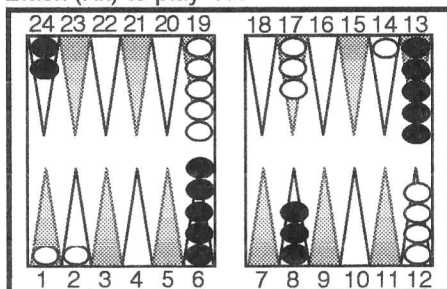


24/23 13/11

TD-Gammon: I see you have finally learned the errors of your previous ways. I, of course, like Jeremy's opening 2-1.

24/23, 13/11.....	+0.006
13/11, 6/5.....	-0.012
24/21.....	-0.020

Black (Kit) to play 41?



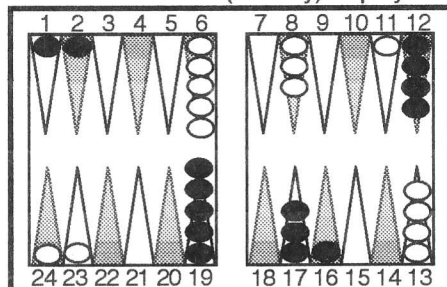
24/23 13/9

Kit: This is the natural developing move. It is far too dangerous to slot the five point in the face of a double shot. 6/2x1x gains a tempo, but the cost of putting a checker out of play this early is much too great.

TD-Gammon: Actually the double hit isn't so bad here, largely because Kit's play leaves so many shots. However I slightly prefer his play.

24/23, 13/9.....	-0.089
6/2x1x.....	-0.092
24/23, 24/20.....	-0.105

White (Jeremy) to play 22?



24/22 13/11 6/4 6/4

Kit: This is obviously a strong developing play, building the important four and 11 points as well as moving the back checker up to where it will annoy me if I don't roll well. Still, the simple hitting play of 24/16x has a lot going for it. The hit puts me on the bar, rips away my only builder, gains a chunk in the race, prepares to play with only one checker back, and stops me from doing anything on the offensive front for a roll. After Jeremy's play I have several good numbers which will make a key point, and then his advantage will be minimal, while after the hit he will certainly retain the advantage almost whatever happens. I prefer 24/16x.

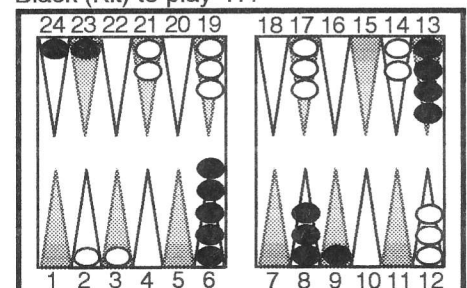
Jeremy: Hitting accomplishes much less. For the fourth deuce I play 24/22 instead of 23/21 because it harasses

Kit's blot without being as attractive of a target. I think this is correct.

TD-Gammon: It will surprise everyone that I like 13/11(2), 6/4(2) rather than moving one of the back men. It even surprised me a bit. What is happening is that since the back checkers are already split there is no pressing need to respit them. Bringing a third checker to the 11 point will give Jeremy more firepower for an upcoming attack; meanwhile by staying back he avoids getting attacked in turn. Actually all the plays are pretty close, including Kit's suggested hitting play.

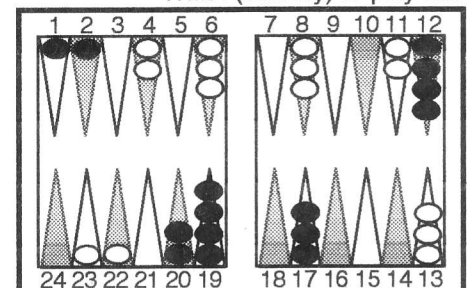
13/11(2), 6/4(2).....	+0.161
23/21, 13/11, 6/4(2).....	+0.152
24/16x.....	+0.150
24/22, 13/11, 6/4(2).....	+0.145

Black (Kit) to play 41?



9/5 6/5

White (Jeremy) to play 33?



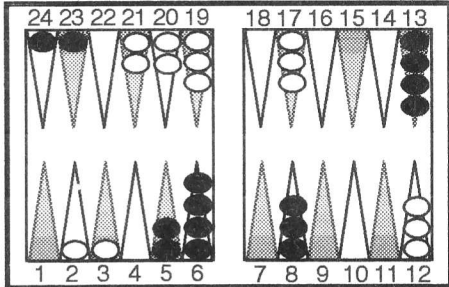
11/5(2)

Kit: This is better than the loose 13/10, 11/5, 8/5, which would give me several indirect shots. The extra builders aren't worth it, particularly since Jeremy's position is well-balanced after the actual play. Of great importance is that Jeremy's back checkers are split, which means that he may be attacked. If that happens, he will not want to have loose blots dangling on his side of the board. In general you want to avoid being weak on both sides of the board at the same time.

TD-Gammon: Kit's analysis is correct. This is not a good time to be strewing blots around.

11/5(2).....	+0.193
8/5(2), 8/2x.....	+0.137
13/10, 11/5, 8/5.....	+0.126

Black (Kit) to play 43?



13/9 6/3x

Kit: I'm not enthusiastic about getting involved in a blot-hitting contest when Jeremy has the stronger board, but I really don't have much else. 13/6 is pretty sick, and just gives him a chance to continue to improve. At least if I get away with my play I can make some headway.

Jeremy: Better than any other play that leaves a shot because it is much more constructive when it works. The alternative, however, is 13/6. I think that's my play. TD-Gammon?

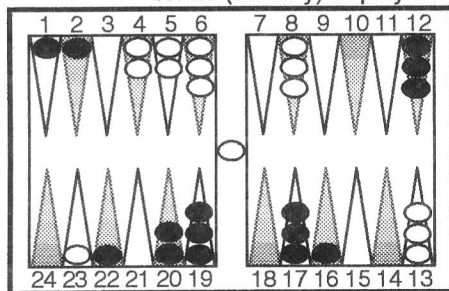
TD-Gammon: You called? You're right, Jeremy, but it's close and Kit's play is not bad. However, avoiding a blot hitting contest when your opponent has the bigger board is often the winner, and so it proves here.

13/6.....	-0.314
13/9, 6/3x.....	-0.321
13/10, 6/2x.....	-0.329

Kit: Jeremy isn't far from a double, with the stronger board and hitting threats. Still he would have to hit and have me flunk in order for him to lose his market by a lot, and if he fails to hit I might be able to equalize things. I agree with waiting, but I wouldn't quarrel with anybody who spun the cube here.

TD-Gammon: The equity is only 0.321, so even with the fairly high volatility this isn't enough. However Kit is right that Jeremy isn't too far from a double.

White (Jeremy) to play 31?



B/22x 23/22

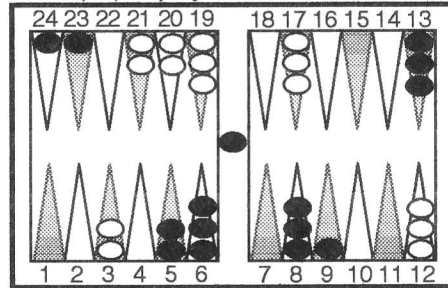
Kit: No reason not to lock up the anchor now. He wants to avoid

retaliation this roll. He will have a strong double next turn unless I roll well.

TD-Gammon: A photo, with moving up toward the more advanced anchor winning by a nose. Admittedly I wasn't taking the cube into account in my analysis.

B/22x/21.....	+0.464
B/22x, 23/22.....	+0.463
B/22x, 6/5.....	+0.439

Black (Kit) to play 21?



B/23 9/8

Kit: Conservative, but necessary. I just can't afford to be hit now.

Jeremy: Now Kit goes the other way and plays safe. It looks to me like the difference between this position and the last is that now Kit has three checkers back and an anchor -- so I leave the nine point slotted and play B/23, 6/5. But I'm not sure at all.

TD-Gammon: No, Jeremy, time to play safe. Last time playing loose accomplished something; it put you on the bar and knocked you off a point you wanted as well as unstacking the heap on the six point and starting the three point for Kit. Here, your suggested play does little constructive.

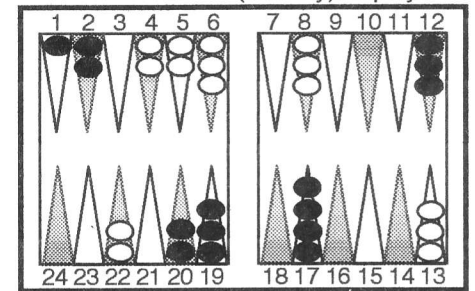
B/23, 9/8.....	-0.443
B/24, 9/7.....	-0.458
B/22.....	-0.481

Kit: Jeremy is still on the verge of a double. The problem now is that he doesn't have many serious threats. He isn't threatening to hit anything, and my position stabilized considerably when I made his two point. My take would be pretty clear, and not too much figures to happen next turn to change that. Even though he has a clear advantage, there doesn't seem to be any reason to turn the cube.

TD-Gammon: Close, but I think Jeremy barely has a double. His equity is 0.443, and while the position doesn't have huge volatility still that looks like just enough. Granted he might tend to be a bit more cautious at the match score, so I can't seriously criticize him

for not doubling.

White (Jeremy) to play 52?

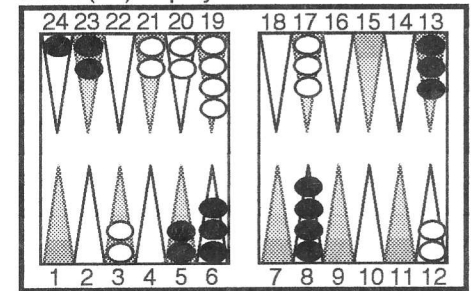


13/6

TD-Gammon: The loose hit on the ace point with 13/11, 6/1x came out surprisingly well considering that the hit is behind Kit's anchor. Still, Jeremy's solid play was the winner.

13/6.....	+0.340
13/11, 6/1x.....	+0.323
13/8, 6/4.....	+0.308

Black (Kit) to play 21?



24/22 23/22

Kit: Advancing the anchor even further is a big plus for me. Now I am in little danger of being primed. Jeremy is still well ahead in the race, but if I can contain one or both of his back checkers the game will go my way.

TD-Gammon: You better believe it! Nothing else is close.

24/22, 23/22.....	-0.279
8/5.....	-0.388
13/10.....	-0.416

...Game 4 continues...

