

## Computers Battle it Out... <br> "just for the fun of it" <br>  JellyFish versus Mloner

Recently two computer programs, JellyFish and Mloner, battled it out on FIBS. The better known JellyFish is available commercially and just released as version 2.00. Mloner is not yet available commercially but plans are in the works. JellyFish (FIBS name: jellyfish) and Mloner (FIBS name: mloner) are both available to play on FIBS. JellyFish's rating is 1875 and Mioner's rating is 1974. A second version of Mloner (FIBS name: Ioner) which plays only 1 -point matches is rated 2077.

To date, a total of three sets of 1005 -point matches have been played. Both authors were asked why and here are their replies.

## Fredrik Dahl (creator of JellyFish). <br> Why were the matches conducted? <br> What version was used?

Why? For fun and for the excitement, and I figured it would be good advertising.

Before the 3005 -point matches, idiot won two 7 -pointers from mloner.

The first 100 were played by level 6 (single lookahead/2-ply play) under the name idiot. The second 100 were played with simplified double lookahead (3-ply play).

The last 100 were also played with a modified double lookahead (level 7 of the JF2.01). In the first 80 of these, there was a cube calculation error that made it double later than it should which was corrected in version 2.01 .

I haven't studied the matches much, so I can't recommend any in particular, but many of them were exciting!

## Harald Wittmann (creator of Mloner)

Good question! :-) Just for fun, I guess (and we had a lot). We quickly recognized that neither
program is strong enough to outplay the other and we would probably not get clear results in only (a few) hundred 5 -point matches. However we always learn from such things and it gives positive input for future versions.

## What version was used?

Since m/loner started playing on FIBS in May 1995, it used some sort of 3-ply (looking at the legal moves with the given dice and looking 2 rolls ahead). However I always tried to improve the 3 ply (better pruning in the game-tree), so mloner plays slightly different from time to time. Currently mloner runs on a Pentium 90, however the 1st and 2nd series were played using a Sun 10 workstation (but both are comparable in speed).

I haven't really looked at the games - it's to much stuff for me. William C. Bitting did some research on the opening moves and also posted parts of 2 games which he found interesting.

First I thought that nobody was interested in the matches and didn't make the second series available to the public. I changed my mind after receiving some email showing this was not true and made them available. Below you will find parts of an email from Mark Damish which was directed to William and myself.

## Mark Damish email:

William was thought to be the only person who was interested in these matches and it took some time to convert the matches into the nice fibsoldmoves format.

William is NOT the only person interested in these matches. I don't have access to the ftp logs on this server, but they are discussed locally. Walter Trice has featured a match in the local BG newsletter Anchors. Bill Robertie requested a printed copy of the matches, which I delivered. Herb Gurland (one of the most respected players in the world) has asked me to drop off a few copies. Butch Meese has mentioned these matches in his newsletter, and makes them available for the price of copying. I guarantee you that these matches are being looked at, studied, and researched by many people!

## Who is Harald Wittmann?

I'm 29, currently living and studing Computer Science in Passau, a small town in Bavaria, Germany. I discovered the game of backgammon three or four years ago and got immediately hooked. I read a lot of bg-books, magazines and studied the game. I have been doing computerprogramming for about 13 years now and when reading about TD-Gammon, what else could happen than to give it a try :-)
...continues on Page 5...

## 1996 HBC Gammon Point Standings. Player of the Month for March was Butch Meese with 208 gammon points. Player of the Month for April was Dave Groner with 154 gammon points. <br> 1) Larry Strommen .570 <br> 2) Dave Groner..................... 534 <br> 3) Butch Meese.................... 528 <br> 4) Sean Garber................... 456 <br> 5) Jim Curtis........................ 360 <br> 6) Don Woods...................... 350 <br> 7) Gabe Stiasny................... 312 <br> 8) Mary Ann Meese.............. 272 <br> 9) Chuck Stimming............... 272 <br> 10) Ellis Bray.......................... 238 <br> Woody Woodworth.......... 234 <br> Jan Gurvitz...................... 210 <br> Kevin McLeaster.............. 130 <br> Neil Ezell.............................. 94 <br> Jamie Curtis....................... 90 <br> Janice Newman................. 70 <br> Bill Gheen.......................... 64 <br> Shimi Dadon.......................... 30 <br> Brian Nelson...................... 20 <br> Keith Jackson.................... 20 <br> Chuck Bower..................... 20 <br> Alan Haas.......................... 20 <br> John Nelson....................... 10 <br> Stan Gurvitz....................... 10 <br> Kevin Bashian................... 10

## Play for Frec...

Bring in a new player and you play for free. If that Player become a $H B C$ member, you play free again.

What could be easier??

Fine Print: Avalable for Thursday evenings only!

## Intermediate Droblem of the Montil by Butch Meese

5-Point Match, Crawford Game Black-0 White-4 Black to play 4-3?



FIBS is a great place to gain backgammon experience. An average of 100 players can be found anytime of the day or night. Most players use alias nicknames while others use their real name. My name on FIBS is indianajones and Mary Ann is mameese.

Most matches are played to 5 or 7 points. Lag can make it slow going at times. After only one game into a 5 -pointer, I was down 0-4 Crawford. The next game I had a great chance to blitz but an untimely double 3's put a stop to that. A couple of rolls later I encountered the above position.

The four is forced with only 3 real choices to move the three: $5 / 2,6 / 3$ or $21 / 18$. I played $21 / 18$ and will explain why.

Since getting gammoned does not hurt me, I can take extra risks to increase my chances to win! White's timing is rather good, meaning White has time to bring home the checkers from the outfield without breaking up the good structure s/he has in place.

|  | March 7th | March 14th | March 21st | $\frac{\text { March 28th }}{\text { Larcy Stren }}$ |
| :---: | :---: | :---: | :---: | :---: |
| 1st | Mary Ann Meese | Jim Curtis | Dave Groner | Larry Strommen |
| 2nd | Butch Meese | Mary Ann Meese | Butch Meese | Butch Meese |
| 2nd | Sean Garber | Butch Meese | Ellis Bray | Don Woods |
|  | April 7th | April 14th | April 21st | April 28th |
| 1st | Dave Groner | Sean Garber | Butch Meese | Don Woods |
| 2nd | Jim Curtis | Dave Groner | Dave Groner | Jim Curtis |
| 2nd | - | Larry Strommen | Larry Strommen |  |

Backgammon Tournament Schedule
Jul 4-7.......... Michigan Summer Championships, Novi Hilton Hotel, Novi, MI. ..... (810) 232-9731
Aug 11-18.... World Cup V, Harvey's Hotel Addison, Dallas, TX ..... (301) 299-8265
Au30-Sep2...44th Indiana Open, Radisson Hotel, Indianapolis, IN. ..... (317) 255-8902
Oct 3-6........6th Illinois BG Championships \& American Cup, Holidome, Rolling Meadows, IL. (847) 945-7801
Thursdays...... 7:00 PM at SPATS (842-3465) Castleton Square (between J.C.Penney's \& L.S.Ayres).... 845-8435

If I move $5 / 2$ or $6 / 3$, it's the start of the destruction of my home board by burying checkers. Having a 5 -point home board is my major asset. Another important factor is that I have a 2-point anchor, a great defensive point. I may not have made this play if I owned the 1 -point instead of the 2-point.

So how do I keep my home board intact while waiting for shots? Sacrifice checkers!! White naturally wants to attack and make a 5 -point board. And when that happens, I will hopefully be dancing to preserve my home board. This strategy does not always work, but it is better than giving up the home board.

To get a better feel for how much of a difference there is, I ran the position by JellyFish 2.0, level 7. To get a complete picture I ran all 4 possible plays.

| Play |  | Wins | G/BGs | BGs |
| :---: | :---: | :---: | :---: | :---: |
| B/21 4/1 | White | $80.8 \%$ | $22.1 \%$ | $1.2 \%$ |
|  | Black | $19.2 \%$ | $2.6 \%$ | $0.1 \%$ |
|  |  |  |  |  |
| B/216/3 | White | $79.5 \%$ | $21.7 \%$ | $1.2 \%$ |
|  | Black | $20.5 \%$ | $2.7 \%$ | $0.1 \%$ |
|  |  |  |  |  |
| B/215/2 | White | $78.4 \%$ | $19.5 \%$ | $1.1 \%$ |
|  | Black | $21.6 \%$ | $3.2 \%$ | $0.1 \%$ |
|  |  |  |  |  |
| B/18 | White | $77.3 \%$ | $28.2 \%$ | $2.2 \%$ |
|  | Black | $22.7 \%$ | $5.6 \%$ | $0.1 \%$ |

From the above data, you can see that my play gets gammoned the most. But that's not important since it produces my best chance to win!

When you hear a story about this game or that game, people always ask Well that happened? White rolled 4-1 making the four point. Next roll my other checker was hit and sent to the bar. I danced until White started bearing off. White rolled double 3s leaving a shot. I hit and won the game, but lost the match on the next game.

## Name the King \& Queen Contest

Winner gets \$25
(\$50 if the winner attends the tournament).
An unnamed King and Queen appear on the front of the 44th INDIANA Open flyer.
Please submit your choice of names to
HBC by August 20th.
At the tournament, players will vote on their favorite.
Both names will be voted on as a pair.
All players voting will have a chance to win $\$ 25$.

Wall-to-Wall Backgammon


## 44th INDIANA Open

Backgammon Tournament

coming to you
Labor Day Weekend Aug 30-Sept 02, 1996
featuring
Indy Swiss Format, \$300 Master Jackpot, \$100 Amateur Jackpot, Directors' Cup, Fast Break Events and the Hoosier Challenge.
at the ever popular
Radisson Plaza Hotel
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(317) 846-2700


# A Couple of 6-3 Problems 

by Chuck Bower

Position One: Black to play 6-3?


Position One occurred in a money game between Jellyfish 2.01 and myself. This seemingly simple position turned out to be deeper than I first thought. In this case, the 6 is forced (20/14). So now you just need to decide on the 3. Moving $5 / 2$ sacrifices diversity for no apparent gain. So the only two reasonable choices are 6/3 and 14/11.

I used Jellyfish level 7 evaluation and level 6 (cubeless) rollouts to gain insight as to the better play. Both agreed that $6 / 3$ is correct, with cubeless equity differences of 0.04 and 0.08 respectively. Combined standard deviation for the rollout was 0.008 in equity. At first glance, you might prefer getting hit on the 3 point (where you have some blocking power) as opposed to the 6 point. However, the Jellyfish analysis indicates that this is not the relevant consideration.

It's not so important where you are hit, but whether or not you get hit at all. If White misses this roll, you can play safe with every number if you had played $6 / 3$, but you still leave shots with ten numbers $(66,65,64,63,55$, 54) after $14 / 11$. This is an increase of $20 \%$ in White's hitting chances. Jellyfish level 7 evaluation contends that White's winning chances also increase by this relative amount, from $12 \%$ to $14 \%$. (Hopefully I haven't confused the reader here by saying that $12 \%$ to $14 \%$ is a $20 \%$ improvement. Using decimal instead of percentage
notation, $20 \%$ improvement means $100 \%+20 \%=120 \%$ $=1.2$. So $1.2 \times 12 \%=14 \%$.)

Position Two: Black to play 6-3?


Now take a look at Position Two. This is identical to Position One, except now White has only one checker on the bar, not two. For those of you who thought Position One was trivial, how would you play this one?

Paradoxically, Jellyfish now prefers $14 / 11$ over $6 / 3$. This time, the cubeless equity differences are 0.05 for level 7 evaluation and 0.07 for cubeless level 6 rollouts (combined standard deviation for rollouts $=0.024$ ) .

Why does Jellyfish appear so fickle? The reason seems to be the location of the back checker. With White's less than intimidating board, it will be hard to contain a single checker. White is saddled with the two part problem of hitting that checker whenever it escapes and simultaneously filling in the 21,20, and 18 points. If White can pick up a second checker, however, then the containment gets a lot easier.

With Black's back checker on the 11 point, he is safer in two ways: \#1 close to home and \#2 not currently under fire. If Black plays $6 / 3$ leaving the checker on the 14 point, an immediate 6-2 by White hits both checkers. In Position One, White has to bring a second checker in against a five point board before having a chance to pick up Black's second checker.

JellyFish was written by Frederick Dahl of Norway and is available from Carol Joy Cole [810-232-9431], CARLCOLE@alumni.sils.umich.edu or from Larry Strommen [317-544-0224], diceman @indy.net.

## 6th Illinois State Backgammon Championships \& America Cup

 October 3-6, 1996 at the Holiday Inn (Holidome) Rolling Meadows, IL (847) 259-5000 Fax: (847) 259-0597
## KG


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Computer Wars continues...

## What is Mloner?

I don't think that I have any special innovations to tell. Sutton and Tesauro did the fundamental work. In my opinion creating a working neural-net is a lot of trial and error. The only thing that I think is important, is not to make the net clumsy -- further lookahead gains more than a little bit better and bigger (therefore slower) net. Chess programs also use a (very) weak evaluation function but usually plays a very strong game by doing a deep lookahead. Loner is using a 3 -ply lookahead since it first started testing games on FIBS. Unfortunately the branching factor of bg is really big -- I'm not able to do 4 -ply in an acceptable time at the slow machine loner is currently running on. But cpu-speed may change that.

In this issue, three of the 300 matches are represented for your inspection and enjoyment. If you have internet access, you can download all the matches using ftp protocol from ftp.cybercom.net. They are in the directory |pub |users |damish |backgammon |bgmatches \fibs \ml_vs jf.

The name of the files are ml-jf-1.zip, ml_ji-2.zip and ml_jf-3.zip. You will need pkunzip to unpack them. You can also receive them in text form by sending $\$ 2.00$ to HBC for postage.

Game 3

| jellyfish-1 |  |  | mloner-1 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 64 | 13/9 24/18 | 51 | 13/7x |
| 2) | 42 | B/23 13/9 | 63 | 24/21 13/7 |
| 3) | 32 | 24/21 23/21 | 61 | 21/15 6/5 |
| 4) | 43 | 13/10x 13/9 | 41 | B/21 6/5 |
| 5) | 31 | 9/8 13/10 | 33 | 24/18 21/18 8/5 |
| 6) | 21 | 6/4 6/5 | 42 | 13/7 |
| 7) | 61 | 6/5 8/2 | 42 | 13/11 7/3 |
| 8) | 63 | 8/2 4/1 | 63 | 13/7 11/8 |
| 9) | 52 | $10 / 8$ 10/5 | 55 | 18/8(2) |
| 10) | 65 | 21/15 21/16 |  | double to 2 ? |
| 11) |  | take | 62 | 8/6 8/2 |
| 12) | 21 | 5/4 8/6 | 54 | 8/4 7/2 |
| 13) | 52 | 8/3 16/14 | 43 | 8/4 7/4 |
| 14) | 62 | 14/6 | 63 | 8/5 7/1 |
| 15) | 53 | 9/6 15/10 | 31 | 4/0 |
| 16) | 11 | 8/4 | 54 | 5/0 4/0 |
| 17) | 51 | 10/5 9/8 | 32 | $3 / 0210$ |
| 18) | 11 | 8/5 1/0 | 62 | 6/0 2/0 |
| 19) | 21 | 5/4 2/0 | 41 | 4/0 1/0 |
| 20) | 52 | 5/0 2/0 | 54 | 6/2 5/0 |
| 21) | 55 | 6/1(2) 5/0(2) | 32 | 6/3 2/0 |
| 22) | 52 | 6/1 6/4 | 43 | 5/1 3/0 |
| 23) | 54 | 6/2 4/0 | 61 | 6/0 1/0 |
| 24) | 32 | game |  |  |

Game 4

|  | oint | latch | Game 1 | 1 mljf268 |
| :---: | :---: | :---: | :---: | :---: |
|  | jellytish - 0 |  |  | mloner - 0 |
|  | roll | played | $\frac{\text { roll }}{}$ | played |
| 1) |  |  | 21 | 24/23 13/11 |
| 2) | 65 | 24/13 | 53 | 8/3 6/3 |
| 3) | 32 | 13/8 | 43 | 24/20 23/20 |
| 4) | 44 | 13/9(2) 8/4(2) | 54 | 13/8 13/9 |
| 5) | 62 | 24/16x | 54 | B/20 13/9x |
| 6) | 31 | B/21 | 32 | 13/10 6/4x |
| 7) | 43 | B/21x/18 | 22 | B/23 11/9 9/7x(2) |
| 8) | 64 | B/15x | 22 | B/23 20/18 7/5(2) |
| 9) | 52 | 15/8 | 54 | 18/13 8/4 |
| 10) | 53 | 6/3 8/3 | 31 | 13/10 8/7 |
| 11) | 52 | 6/4 13/8 | 65 | 10/4 7/2 |
| 12) | 54 | 13/9 13/8 | 43 | 8/5 6/2 |
| 13) |  | double to 2? |  | pass |

## Game 2

|  |  | fish - 1 |  | mloner - 0 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 2) |  |  | 4 | B/21 24/18 |
| 3) | 65 | $6 / 1 \mathrm{x} 1317 \mathrm{x}$ | 6 | B/21 $24 / 18$ |
| 4) |  | 6/17 | 52 | B/23 B/20 |
| 5) |  | 15/1/8 | 52 | 2120 $1{ }^{\text {a }}$ |
| 6) | 41 | 15/8 | 52 | 9/4 6/4 |
| 6) | 41 | 24/20 8/7 | 62 | 13/5x |
| 7) | 42 | B/23 13/9 | 44 | 20/16x 9/5 6/2x(2) |
| 8) | 64 | EF | 61 | 13/7 8/7 |
| 9) | 43 | B/22 EF |  | double to 2? |
| 10) |  | pass |  |  |

mloner - 3
played
$24 / 13$
$24 / 15$
$8 / 56 / 5$
$15 / 8$
$13 / 10(4)$
$10481 / 3$
$10 / 4(2) 8 / 2(2)$
B/24x $6 / 2$
EF
pass

Game 5

| 1) | $\frac{\mathrm{roll}}{32}$ |
| :---: | :---: |
| 2) | 64 |
| 3) | 21 |
| 4) | 54 |
| 5) | 51 |
| 6) | 31 |
| 7) | 42 |
| 8) | 51 |


| mloner - 3 |
| :---: |
| played |
| $24 / 2313 / 8$ |
| $\mathrm{~B} / 2224 / 218 / 5(2)$ |
| $\mathrm{B} / 21 \mathrm{EF}$ |
| $\mathrm{B} / 20 \mathrm{~B} / 24$ |
| $\mathrm{~B} / 20 \mathrm{x} 64 \mathrm{x}$ |
| $24 / 13$ |
| $20 / 13$ |
| EF |
| pass |

Game 6

| jellyfish-3 mloner-3 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 65 | 24/13 | 64 | 24/18 13/9 |
| 2) | 65 | 24/13 | 42 | 8/4 6/4 |
| 3) |  | double to 2? |  | take |
| 4) | 64 | 8/2 6/2 | 22 | 13/7 9/7 |
| 5) | 52 | 13/6 | 62 | 18/10 |
| 6) | 64 | 13/3 | 31 | 8/5 6/5 |
| 7) | 32 | 6/3 13/11 | 32 | 8/3 |
| 8) | 63 | 8/5 11/5 | 42 | 13/11 7/3 |
| 9) | 51 | 6/5 13/8 | 32 | 11/9 10/7 |
| 10) | 32 | 13/8 | 41 | 9/8 6/2 |
| 11) | 44 | 13/5 5/1x(2) | 22 | EF |
| 12) | 64 | 13/3 | 43 | B/21 13/10 |
| 13) | 54 | 8/3 6/2 | 44 | 13/9 10/2 8/4 |
| 14) | 42 | 8/4x/2 | 51 | EF |
| 15) | 65 | 8/3 6/0 | 63 | B/19x 9/6 |
| 16) | 51 | B/24 EF | 43 | 19/15 4/1x |
| 17) | 61 | B/24x EF | 21 | EF |
| 18) | 52 | 3/1 NP | 52 | EF |
| 19) | 51 | 2/1 NP | 53 | EF |
| 20) | 43 | 5/1 5/2 | 64 | B/19 15/11 |
| 21) | 66 | NP | 52 | 11/4 |
| 22) | 31 | 2/1 NP | 31 | 19/18 4/1x |
| 23) | 53 | EF | 64 | 18/14 7/1 |
| 24) | .. | CB | 54 | 14/5 |
| 25) | .. | CB | 33 | 7/4 5/2 6/0 |
| 26) |  | CB | 44 | 6/2(2) 5/1(2) |
| 27) | 31 | EF | 42 | $4 / 0210$ |
| 28) | 64 | B/15 | 31 | 3/0 1/0 |
| 29) | 42 | 15/9 | 65 | 4/0(2) |
| 30) | 51 | 9/4 1/0 | 66 | game |

5 Point Match
Game 1
mljf199


Game 2


Game 3


Game 4


## Game 5

|  |  | fish - 1 |  | moner - 3 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | $\frac{\mathrm{roll}}{65}$ | played |
| 2) | 64 | $8 / 2 \cdots / 2$ | 53 | 8/3 6/3 |
| 3) | 63 | 13/7 13/10 | 52 | 13/8 13/11 |
| 4) | 32 | 7/5 8/5 | 52 | 24/17x |
| 5) | 41 | B/21 6/5 | 65 | 17/11 13/8 |
| 6) | 42 | 10/4 | 62 | 11/3 |
| 7) | 65 | 21/10 | 61 | 11/5 6/5 |
| 8) | 53 | 13/8 10/7 | 62 | 13/5 |
| 9) | 51 | 8/3 5/4 | 63 | 8/2 5/2 |
| 10) | 64 | 13/3 | 63 | 8/2 6/3 |
| 11) | 51 | 7/1 | 62 | 8/2 8/6 |
| 12) | 41 | 6/1 | 41 | 13/12x/8 |
| 13) | 31 | B/21 | 66 | 13/7 8/2 NP |
| 14) | 32 | 21/18x/16 | .. | CB |
| 15) |  | double to 2? |  | pass |

Game 6

|  |  | ellyfish - 2 |  | mloner - 3 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 31 | $8 / 56 / 5$ | 32 | 13/10 13/11 |
| 2) |  | double to 2? |  | take |
| 3) | 63 | 24/15x | 21 | B/23 11/10x |
| 4) | 63 | B/22 24/18 | 61 | 13/7x 8/7 |
| 5) | 44 | B/21 13/9 6/2x(2) | 54 | B/16x |
| 6) | 41 | B/24 13/9x | 32 | B/22 10/8 |
| 7) | 51 | 9/3x | 52 | EF |
| 8) | 42 | 24/20 22/20 | 62 | EF |
| 9) | 61 | 21/14 | 42 | B/21 24/22x |
| 10) | 61 | B/24 14/8 | 44 | 13/9(2) 6/2(2) |
| 11) | 65 | 20/14 8/3x | 61 | B/24 21/15 |
| 12) | 42 | 14/10x 13/11 | 31 | B/22x 6/5x |
| 13) | 31 | B/24 B/22 | 42 | 9/5 9/7 |
| 14) | 63 | 13/7 10/7 | 32 | 24/21 24/22 |
| 15) | 51 | 22/16 | 66 | 22/16(2) 21/9x |
| 16) | 65 | EF | 41 | 16/15 16/12x |
| 17) | 64 | B/21 EF | 42 | 15/9 |
| 18) | 52 | EF | 21 | 7/4x |
| 19) | 53 | B/22 EF | 61 | 9/3x 4/3 |
| 20) | 44 | B/21(2) 8/4(2) | 21 | 9/6 |
| 21) | 21 | 7/6 11/9 | 64 | 12/2 |
| 22) | 54 | 9/4 7/3 | 21 | 8/5 |
| 23) | 21 | 6/3 | 62 | 8/2 8/6 |
| 24) | 21 | 4/1 | 32 | 6/3 5/3 |
| 25) | 63 | 21/12 | 11 | 7/6 7/5 3/2 |
| 26) | 51 | 12/6 | 41 | 5/4x/0 |
| 27) | 63 | EF | 62 | 6/0 2/0 |
| 28) | 43 | B/21 6/3 | 31 | 6/5 3/0 |
| 29) | 22 | 6/4 6/2 3/1 | 66 | 6/0(2) 5/0(2) |
| 30) | 32 | 21/16 | 66 | 5/0 3/0(2) 2/0 |
| 31) | 51 | 24/18 | 32 | 2/0(2) |
| 32) | 51 | 16/11 24/23x | 31 | EF |
| 33) | 53 | 11/6 18/15 | 52 | EF |
| 34) | 63 | 15/6 | .. | CB |
| 35) | 31 | 23/19 | .. | CB |
| 36) | 63 | 19/10 |  | CB |
| 37) | 65 | 10/5 6/0 | 54 | EF |
| 38) | 53 | 6/3 5/0 | 43 | EF |
| 39) | 21 | 3/0 | 33 | EF |
| 40) | 63 | 5/0 5/2 | 66 | game |

5 Point Match
Game 1

|  |  | idiot - 0 |  | mloner - 0 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | playe |
| 1) |  |  | 31 | 8/5 6/5 |
| 2) | 43 | 13/9 24/21 | 21 | 24/23 6/4x |
| 3) | 64 | B/21x/15 | 11 | B/22 23/22 |
| 4) | 54 | 15/10 13/9 | 33 | 24/15x 13/10 |
| 5) | 22 | B/23 24/22 6/4(2) | 53 | 15/10 13/10 |
| 6) | 33 | 13/10 8/5(3) | 42 | 13/11 10/6 |
| 7) | 64 | 22/16 10/6 | 66 | 10/4(2) 8/2x(2) |
| 8) | 64 | EF |  | double to 2? |

Game 2

|  |  | diot - 0 |  | mloner - 1 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 43 | 13/10 13/9 | 44 | 24/16x 13/9(2) |
| 2) | 32 | B/22 24/22 |  | double to 2? |
| 3) |  | take | 31 | 8/5 6/5 |
| 4) | 41 | 13/9x 10/9 | 65 | B/14 |
| 5) | 65 | 24/13 | 62 | 14/8 6/4 |
| 6) | 65 | 8/3 9/3 | 51 | 9/8 9/4 |
| 7) | 41 | 9/5 6/5 | 21 | 8/5 |
| 8) | 54 | 13/9 6/1x | 11 | B/24x 8/7(3) |
| 9) | 21 | B/22 | 66 | 24/18 13/7 7/1 (2) |
| 10) | 52 | 22/17 9/7x | 65 | EF |
| 11) | 65 | 13/7 13/8 | 41 | B/21 5/4 |
| 12) | 62 | 6/4x 17/11 | 31 | B/21x |
| 13) | 32 | B/22 8/6 | 53 | 21/13 |
| 14) | 33 | 8/2 7/4(2) | 62 | 13/5 |
| 15) | 61 | 6/5 8/2 | 31 | 6/2 |
| 16) | 64 | 11/7 22/16 | 62 | 7/1 7/5 |
| 17) | 21 | 16/13 | 41 | 5/1 2/1 |
| 18) | 32 | 13/10 7/5 | 62 | 13/5 |
| 19) | 53 | 10/2 | 61 | 13/6 |
| 20) | 42 | 22/185/3 | 41 | 6/2 1/0 |
| 21) | 52 | 18/11 | 42 | 6/2 6/4 |
| 22) | 52 | 3/1 11/6 | 65 | 5/0(2) |
| 23) | 61 | 22/15 | 61 | 5/0 1/0 |
| 24) | 41 | 15/10 | 65 | 5/0 4/0 |
| 25) | 22 | 10/6 2/0(2) | 31 | 4/0 |
| 26) | 42 | 4/0 2/0 | 51 | 4/0 1/0 |
| 27) | 52 | 5/0 6/4 | 21 | 4/3 2/0 |
| 28) | 53 | 5/0 3/0 | 11 | game |

## Game 3

|  |  | diot - 0 |  | mloner - 3 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 21 | 24/23 13/11 | 52 | 24/22 13/8 |
| 2) | 62 | 13/11 24/18 | 32 | 24/22 8/5 |
| 3) | 31 | 23/20x 11/10 | 54 | B/16 |
| 4) | 21 | 11/9x 10/9 | 53 | B/20 8/5x |
| 5) | 11 | B/23 6/5x(2) | 22 | B/21 6/4(2) |
| 6) |  | double to 2? |  | take |
| 7) | 55 | 18/8 9/4x(2) | 61 | B/18 |
| 8) | 55 | 23/8 13/8 | 43 | 18/11 |
| 9) | 32 | 13/10 13/11 | 54 | 13/8 13/9 |
| 10) | 54 | 8/4 11/6 | 54 | 9/5 8/3 |
| 11) | 52 | 8/6 10/5 | 21 | 13/12 11/9 |
| 12) | 64 | 8/4 8/2 | 55 | 12/2 9/4 8/3 |
| 13) | 42 | 8/6 8/4 | 41 | 13/9 8/7 |
| 14) | 21 | 4/1 | 64 | 9/5 7/1 |
| 15) | 22 | 6/4 6/0 | 61 | 22/15 |
| 16) | 53 | 6/1 4/1 | 53 | 15/7 |
| 17) | 33 | 6/3x(3) 5/2 | 66 | B/1 |
| 18) | 52 | 5/0 2/0 | 52 | 7/0 |
| 19) | 53 | 3/0 5/0 | 62 | 6/0 2/0 |
| 20) | 22 | 4/0(2) | 55 | 6/1 5/0(3) |
| 21) | 43 | 3/0 4/0 | 41 | 4/0 1/0 |
| 22) | 65 | 4/0 3/0 | 65 | 6/1 4/0 |
| 23) | 52 | game |  |  |

Game 4

|  | idiot-2 |  | mloner - 3 <br> played |  |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | $\frac{\text { roll }}{52}$ | $13 / 813 / 11$ |
| 1) | $\ddot{n}$ | $24 / 15$ | 52 | $13 / 116 / 1 \mathrm{x}$ |
| $2)$ | 63 | $B / 2315 / 10$ | 61 | $8 / 2 \times / 1$ |
| $3)$ | 52 | $B / 2 / 1013 / 8$ | 66 | $24 / 18(2) 13 / 7(2)$ |
| $4)$ | 55 | $B / 36 / 4$ | 42 | $11 / 98 / 4$ |
| $5)$ | 52 | $8 / 36 / 5$ |  |  |
| $6)$ | 31 | $13 / 106 / 5$ | 61 | $11 / 56 / 5$ |
| $7)$ | 64 | $13 / 3$ | 52 | $8 / 36 / 4$ |
| $8)$ | 44 | $13 / 9(2) 10 / 2$ | 61 | $8 / 27 / 6$ |
| $9)$ | 55 | $10 / 5(2) 9 / 4(2)$ | 54 | $18 / 1418 / 13$ |
| $10)$ |  | double to $2 ?$ |  | pass |


|  |  | idiot - 3 |  | oner-3 |
| :---: | :---: | :---: | :---: | :---: |
|  | roll | played | roll | played |
| 1) | 31 | $6 / 58 / 5$ | 65 | 24/13 |
| 2) | 21 | 6/5 13/11 | 42 | 8/4 6/4 |
| 3) | 42 | 13/11 24/20 | 62 | 13/5x |
| 4) | 54 | $\mathrm{B} / 20 \times 24 / 20$ | 21 | B/22 |
| 5) |  | double to 2? |  | take |
| 6) | 42 | 11/9 13/9 | 54 | 22/13 |
| 7) | 61 | $6 / 5$ 11/5 | 43 | 13/6 |
| 8) | 44 | 20/16(2) 5/1x(2) | 43 | B/21 6/3 |
| 9) | 41 | 8/4x 5/4 | 61 | EF |
| 10) | 21 | 9/8 9/7 | 61 | EF |
| 11) | 63 | 16/13 16/10 | 42 | B/23 13/9 |
| 12) | 43 | 10/7 13/9 | 32 | 13/11 6/3 |
| 13) | 66 | 13/7(2) $8 / 2 \times(2)$ | 43 | B/22 13/9 |
| 14) | 22 | 7/3x(2) | .. | CB |
| 15) | 11 | 9/8 7/6 7/5 |  | CB |
| 16) | 55 | 8/3 6/1 (3) | 61 | B/19 8/7 |
| 17) | 51 | 1/0 5/0 | 63 | 11/5 9/6 |
| 18) | 21 | $1 / 02 / 0$ | 42 | 13/11 9/5 |
| 19) | 42 | 2/0 4/0 | 63 | 13/10 11/5 |
| 20) | 65 | 5/0(2) | 65 | game |


$\square$
$\square$
$\square$
Rifleman Shoot-Out

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