# The Intelligent
# Gambler

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Number 2, November 1994

## PUBLISHER'S CORNER
*Chuck Weinstock*

We're happy to present this, the second issue of *The Intelligent Gambler* to you. Mason Malmuth, Ken Elliott, Michael Dalton, Lee Jones, Anthony Curtis, and Bob Wilson have all contributed articles to this issue. They cover topics including the mathematics of gambling, craps, comps, blackjack, and poker.

We've been busy over the last six months, working on new and upgraded products. With this issue we announce two new products from ConJelCo:

• Version 2 of *Ken Elliott's CrapSim*, featuring better graphics and more extensive simulation capability.
• Lee Jones's new book, *Winning Low-Limit Hold'em*.

More information about these products appears at the end of this newsletter.

As always, we're committed to bringing you only the best in gambling related products, whether published by ConJelCo or other vendors.

As an additional service to our customers, ConJelCo is now on the Internet. We're providing on-line access to the ConJelCo catalog as well as downloadable demonstrations and other items sure to be of interest. More information about this free ConJelCo service appears later in *The Intelligent Gambler*. ♠

## GAMBLING THEORY—
## The Standard Deviation
*Mason Malmuth*

Suppose you are an expert gambler. Perhaps you are a poker player, perhaps you are a blackjack card counter, or perhaps you are highly skilled at some other game. It really doesn't matter where your expertise lies. But let's assume that you are good enough to win at a rate of $50 per hour in some hypothetical game. The problem is that you won't win $50 every hour that you play. Sometimes you will do better and sometimes you will do worse (and perhaps even lose.) It turns out that there is another measure besides "how much should I win" that should be important to you, the winning gambler. What is it? It is the (statistical) standard deviation.

First, let's define what we mean by standard deviation. The standard deviation is a statistical measure of dispersion and most statisticians agree, that for all practical purposes, the total population of possible results is contained within three standard deviations of the mean. For example, suppose your $50 an hour win rate is accompanied by a $500 per hour standard deviation. Then having a $1500 swing, either up or down, in an hour, is not to be unexpected in your hypothetical game. No wonder some people seem incredibly lucky while others are quick to tell you how they have been "running bad."

Next, lets suppose that you, the expert, play your favorite game for 100 hours. Your expectation after this length of time should be $5000.

$$5000 = (50)(100)$$

However, as seen above, there is a good chance you won't win exactly $5,000. You might do better or you might do worse. It turns out that the standard deviation of a sample is inversely proportional to the square root of the sample size. That is, after 100 hours we divide the per hour standard deviation by 10 (the square root of 100) to get 50.

$$50 = (500)/(10)$$

That means that you could be losing as much as $100 per hour or winning as much as $200 per hour.

$$-100 = 50 - (3)(50) \text{ and,}$$
$$200 = 50 + (3)(50)$$

Imagine you, the expert, playing for 100 hours and being down $10,000. Well it definitely can and does happen!

Here's another example for the same hypothetical game. Suppose you have two break-even players, each of which is experiencing this $500 per hour standard deviation. After 100 hours, it is actually possible for one of these players to be

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*The Intelligent Gambler* is published on an irregular basis by ConJelCo as a free service to our customers. Our address is 132 Radcliff Drive, Pittsburgh, Pennsylvania, 15237. We can be reached by telephone at 800-492-9210 (orders only), or 412-492-9210 or by fax at 412-493-9031. We're also on the Internet (URL http://www.conjelco.com.) Send e-mail to orders@conjelco.com.

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ahead $15,000 and for the other person to be behind by the very same amount. Now who would be taking lessons from whom?

Even though a $500 per hour standard deviation coupled with a $50 per hour win rate may appear high, these sort of results are really typical for expert gamblers who expect to do quite well in the long run. It's just a fact of life. If you correctly gamble for profit, and it doesn't matter if your game is poker, blackjack, sports betting, real estate, stocks, commodities, backgammon, progressive slot machines, or something else, there will be times when your bankroll will jump up and down, and there isn't much that you can do about it.

Another thing that the large standard deviation inherent in almost all forms of gambling does is to help create many silly theories dealing with the topics of luck and "money management." For example, in recent years the idea of "blackjack biases" has become popular. The notion is that biases can develop in a deck which are present from shuffle to shuffle and that you will be able to find tables where the dealer is busting too often, you can make lots of blackjacks, you almost always catch a ten when you double down, and all sorts of good things. Needless to say, once you have identified these tables, you just sit down and win a barrel full of chips.

There are supposed to be tables where the opposite is happening. Needless to say, you want to stay away from these tables unless of course you don't like your money.

Is any of this true? Do these sorts of biases develop? Unfortunately, *the answer is no!* What happens is that in a large casino, with a lot of tables, the large standard deviation that is present in blackjack will make it appear some tables are breaking tables, some tables are good for doubling down, some tables are good for making a lot of blackjacks, and so on. The point is that these patterns are expected in the sense that they can be identified after they have happened at a small percentage of the tables present in the casino. But there is no reason to believe that they will continue and those of you who pursue these ideas should expect to go broke. (By the way, there are

systems that can be purchased that are based on these strange concepts. They are usually very expensive.)

There is one other thing that I want to mention about the standard deviation. Even though it can cause havoc with our bankrolls and does lead to many irrelevant theories about gambling, it is, assuming you are a skilled gambler, your friend. The reason for this is simply that this statistical measure is the "hook" that keeps the poor players in action. If the losers always lost I doubt that many of them would keep playing. And with no losers to win the money from, there would be no "long-run" winners.

*© 1994, Mason Malmuth. Mason Malmuth is a professional mathematician who has become a recognized expert on gambling. His book,* **Gambling Theory and Other Topics,** *has recently been revised. This and other books by him and co-authors David Sklansky, Lynne Loomis, and Ray Zee are all available through ConJelCo.* ♠

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## WINNING AT BLACKJACK
*Michael Dalton*

I recently played in the best blackjack game of my life. Imagine a face-up single deck game occasionally dealt through the bottom of the deck! Imagine favorable Las Vegas Strip rules with double after splitting allowed! Imagine an inexperienced dealer who occasionally made an error or two! Imagine little or no heat! Imagine a game that you can't resist to overbet your bankroll in! Image a player who *lost* a lot of money!

Yes, I lost money in this game. I played perfectly! I was in top condition and I used all of the card counting skill that I could come up with in an attempt to beat this dealer. I *know* I had the advantage and I was confident that I wasn't being cheated. So how on Earth could it be possible to lose money?

The answer to the above question is that even with perfect conditions, great rules and a friendly dealer, card counters will have their share of losing sessions. These losing sessions can last a dreadful long time and it takes a lot of discipline and character to ride through them un-

scathed. The standard deviation in this game can be brutal and unless you come to understand and respect this fact you may never see a long run profit—even if you are the best card counter on this planet!

Therefore, one of the most important skills the serious card counter must master is the ability to play within an established bankroll. A good counter knows beforehand what his acceptable minimum and maximum bet will be. If he exceeds this maximum bet or plays in an otherwise foolish manner the poor house is often not far away. Not only does his bankroll affect practically every major decision he makes at the table it also determines his theoretical win rate. And friends—*win rate* is what it is all about for the serious player.



Recently, there has been a lot of controversy regarding what a card counter's optimal bet should be in a given situation. For years, Kelly criterion betting was the way to go and the best recommendation was to simply bet your advantage. In other words, if your card counting system indicated that you had a 5% advantage on the next hand then you were told you could *safely* bet *up to* 5% of your bankroll. In my opinion, this is still good advice, however, a problem arises when one attempts to define what their bankroll is.

Professional players usually have no problem with defining a bankroll. As a minimum, this bankroll must be maintained or the player doesn't eat. But how do we deal with the serious recreational player? This category of player, of which the majority of us would fit into, play blackjack less frequently and usually don't maintain a separate blackjack bank. The big difference however, is that the recreational player is often in a much better financial situation. In my opinion, the recreational player can often *afford* to

make larger bets with an apparently smaller bankroll. The reason is because the recreational player can always recoup losses and come back next week, after the next paycheck, or after a few dollars have been saved again. Mathematically, you might think of a recreational player's bankroll as a continuously maintained bank whether or not any losses occur.

Some experts may disagree with my opinions and to be honest I am still debating with myself the validity of these ideas. Did I really make a big mistake of overbetting my bankroll in the great single deck game I mentioned above? Yes, I lost more money that I felt comfortable with but given the same situation in the future, when I have similar cash reserves, I think I would make the same decision.

*©1994, Michael Dalton. Michael Dalton is the author of the encyclopedic resource* Blackjack: a Professional Reference *and editor and publisher of* Blackjack Review—*a 50+ page quarterly newsletter published since 1992. Both are available through ConJelCo.* ♠

## CRAPS BET SELECTION
### Ken Elliott

*A Statistical Characterization and Comparison of Selected Craps Money Management and Bet Selection Systems*

Last June I presented the paper with that title at the *9th International Conference on Gambling and Risk Taking*. This month I'll be writing a high-level summary of the paper. If it interests you, see the end of the article for how you can get a free copy of the full paper.

Despite the intimidating title, the goals of the paper were simple. Since every bet in craps, with the "exception" of free-odds bets, has a negative expectancy, and since the sum of a series of negative-expectancy wagers can never be positive, the paper does not attempt to find or define a system for craps with positive expectancy. However, given that you are going to play craps, there may be "systems" of play that are better suited to a particular style of player, or goal of the player, than another. As an example, one

player may wish to use a system that has high bankroll variance (that is, the amount of the final bankroll varies widely given a fixed number of rolls) in order to maximize his potential win, while another player may wish to play a system with low bankroll variance in order to conserve her bankroll and thus possibly prolong her time at the table.

The paper sets out to characterize various systems of play. Many of these will be familiar to you, while some may be obscure. The systems examined in the paper are:

- Pass bet with full double odds,
- Simultaneous Pass and Don't Pass bets, with full double odds on the Pass bet,
- Hoyle's Press,
- Ponzer (Pass, two Come bets, full double odds on all bets),
- D'Alembert,
- Contra-D'Alembert,
- Martingale,
- Anti-Martingale,
- Oscar,
- Five Count,
- Patrick Basic Right system (Pass, place the 6 and 8),
- 31 System,
- Don't/Place system, and the
- Rec.Gambling Place-Lay system.

There are two broad characteristics of the above systems examined in the paper. The first characterizes various aspects of the amount of the final bankroll across several different session lengths (sessions lasting 100, 200, 400, and 800 rolls). The second characterizes how



long a session will last given a certain starting bankroll size and a win limit. For this measure, the system is played until the player can't make another bet (they bust out) or until the win limit (50% or 100% of the initial bankroll) is reached.

In reality, most players (including yours truly) will want to look at a combination of the two measures, but the characterizations given in the paper are a useful starting point in analyzing the particular systems against one's playing style.

The way in which the systems are categorized is based on a statistical analysis of repeated runs of the systems through a simulator (the end of the article has particulars about the software I used to generate the results reported in the paper). The paper gives the full details of the statistical methods used, but for now I'll just say that the simulator is set up to play a particular system with certain criteria that tell it when to stop, as briefly described above (e.g., stop when you've reached 400 rolls). Once the simulator stops, it records the result of interest (e.g., the final bankroll) and then runs another simulation. It keeps doing this until the result it's trying to obtain falls within a certain margin of error; this is described in the paper.

All of the results are collected, and then various statistical characteristics of these data are reported. This isn't as dry or academic as it sounds; these characteristics are things like average final bankroll, average length of a session, average win and loss in a session, etc. Various measures are also calculated in order to try to make it easy to compare the different systems; something that is more difficult than it sounds, due to the assumptions that the statistical tests make and to the varying characteristics of the data produced by the systems.

The time-limited characteristics examined are:

- Mean net loss: average amount of money lost during the session
- Statistical hold: calculated percentage of the bet handle that the system lost
- Standard deviation of the final bankroll: measure of the range of the final bankrolls that can be expected for the system
- Volatility of the final bankroll: a different measure of the range of the final bankrolls
- Mean win index: measure of average win for a system that can be compared with other systems

- Mean loss index: measure of average loss for a system that can be compared with other systems
- Mean win/loss amount ratio: ratio of the average amount won to the average amount lost
- Win/loss ratio: ratio of the number of wins to the number of losses

The bankroll-limited characteristics examined are:

- Overall mean length: average number of rolls it took to either bust out or reach the win-limit
- Mean length for busting out: self-explanatory
- Mean length for reaching win-limit: self-explanatory
- Standard deviation of the overall mean length: essentially measures how long you can expect to be able to play before either reaching the win-limit or busting out
- Win-limit/bust-out ratio: ratio of the number of rolls it took to reach the win-limit to the number of rolls it took to bust out
- Win/loss ratio: ratio of the number of winning sessions to the number of losing sessions

As I mentioned, the paper has a lot more information about these characteristics. You might have a good guess as to how I generated the information that I used in the paper: it was with a specialized, early version of the *CrapSim* version 2.0 system simulator. This simulator allows input of almost any system, and then it generates the raw statistics that I used as a basis for making the calculations that appear in the paper. It also allows me to export the information to a spreadsheet, which I used to generate the tables and graphs that appear in the paper. This new version of CrapSim will shortly be available (see page 7.)

If this column has piqued your interest in the paper, here's the information you need to get a copy. If you are connected to the Internet and to a PostScript® printer, then you can anonymously ftp a free copy from ftp.conjelco.com in the "pub" directory. It's called *elliott-paper.ps*. If you are on the world-wide web, you can get a copy through ConJelCo's web server at URL http://www.conjelco.com. If you don't have

access via either of those routes, you can send $2.00 to cover postage and reproduction costs (it is a 26-page paper, after all) to ConJelCo, and you'll get your copy as soon as we can put it in the mail.

## SHOULD I BET ON THE RIVER?
*Lee Jones*

I'm not even sure I should be writing this.

I was recently in a conversation with Chuck Thompson, a way-tough poker pro. He makes his living playing $30-$60 and bigger hold'em and big limit lowball. He's also quite successful on the tournament circuit. Anyway, Chuck has written a couple of really good strategy articles for *Card Player*, and I told him I was disappointed I hadn't seen one from him in a while.

"I'm not doing that anymore," he said. "It occurred to me that I was giving away important secrets for an amount of money equal to a couple of bets in my game. It was stupid." Well, Chuck's probably got a point, but I can't resist getting up on a soapbox about things once in a while.

Here's the message that I probably shouldn't give out: *If you have a good hand, bet on the river* only *if you want to be called*. That is, assuming you're not bluffing, ask yourself if a worse hand will call your bet. I see this all the time and I make a ton of money off of it in low- and medium-limit hold'em games. Here's an example: I have A♥-5♥ on the button, and limp in behind three other players. The flop comes Q♦-A♦-3♥. First guy to act bets, two others fold. I raise, hoping to see a free turn card and check the hand down if I don't improve. The turn is the 7♠, he checks, and I do too. Now it looks like I've tried to get a free card with a diamond draw, *nu*? But here's the weird part: the 8♣ hits on the

river, and he *bets*. I call, show him my ace, and it's good. He displays a queen and says, "I thought you were drawing at diamonds." Well, that's a perfectly reasonable guess, but what was I going to do on the river if I was drawing at diamonds? *Throw my hand away.* So, he only gets called if I can beat him. His final bet has no positive expectation whatsoever, unless I call with a worse queen, which is unlikely. He *cannot* bet in that situation.



Another example, Omaha (high only). You have 9♥-9♠-8♥-6♣. Flop comes down 9♣-7♥-2♠ (not a bad flop). You bet, and get one caller. Turn is the 3♥; you still have the nuts. You bet again and he calls like a shot. Now the river is the J♥; you've backed into a flush. Should you bet? I think this is a really good time to check and call. If he's made the nut flush, you're going to look at a raise that you have difficulty calling. If he has none of it, he'll fold when you bet. But your check shows fear of the hearts: he might bet a T-8 straight for value here, or bluff at the pot with nothing.

Sklansky and Malmuth recommend betting if your hand has a 55% chance of being best after your opponent has checked. I'm completely incapable of figuring out that sort of number, particularly in the heat of battle. Nevertheless, you need to ask yourself before you bet: "Will a worse hand call me?"

Finally, two notes on this subject:

Suppose you've been doing the betting with what you think is the best hand, and decide on the end that you probably have the best hand, but can't bet. Be prepared to call a bet, particularly in an aggressive game. Many opponents will react to your check like bulls to a red flag, and fire immediately. Notice the convenient side effect of inducing bluffs here.

In a very loose game, you can bet many more hands for value on the end. In some

of the hold'em games I'm in, one can bet any top pair for value on the river without a second thought if the board is not scary. Don't check down top pair just because it hasn't improved. Just ask yourself, "If I bet, will I be glad to get called?"

*© 1994, Lee Jones. Lee Jones makes his living in the computer industry, and augments his income at the poker table. He is a frequent contributor to* Card Player *magazine. Lee's new book,* Winning Low-Limit Hold'em, *will be published by ConJelco on December 1. See the special pre-publication offer elsewhere in this issue.* ♠

## RAISING AND BEING RAISED
*Bob Wilson*

In poker, we raise to get more money in the pot, to reduce competition, or to do both. Competent opponents do the same. To gain some insight into the effectiveness of raising as well as how to best handle raises by opposing players, we tested various ways of playing three specific in a specific position in a Texas Hold'em game. The three test hands were pocket kings, pocket nines and pocket fours; all while in the small blind.

Test scenario: "Smart computer simulations" of a ten player $30-$60 limit game with a $20 small blind and a $30 big blind. The ten computer players are programmed to call, cold call, raise, re-raise or fold before the flop based on their position, the cards held, and the status of the pot. Decisions after the flop are handled similarly but the board cards are also considered.

Each test consisted of 15,000 deals. The button was frozen at seat nine. Our test player, the small blind, was in seat 10. The game was reasonably loose; on average, five players saw the flop and, excluding the actions of player 10, the pot was raised before the flop 1/2 of the time. The deck was "stacked" so that player 10 got a pocket pair each time while the other nine players got 15,000 "random" hands. However, to reduce the impact of luck, we forced the deck to be shuffled in a special way which made each test nearly identical, except for the rank of the pocket pair.

Betting action after the blinds can result in a different pot status by the time the small blind must decide what to do:

*No raises yet:* Choices are complete the blind, raise or fold.

*Pot was raised or even reraised:* Choices are to call the raise(s), reraise or fold.

If the small blind stays in, the pot may be raised or reraised back to the small blind. Again, the small blind must decide what to do. In the following table, this column is labeled "*Later Action*".

| Raises=0 | Raises=1 | Raises=2+ | Later Action | Pocket Kings | Pocket Nines | Pocket Fours |
|---|---|---|---|---|---|---|
| Complete | Call | Call | Call | $111.68 | $15.90 | -$8.28 |
| Raise | Call | Fold | Call | $139.04 | $30.45 | -$2.48 |
| Raise | Call | Fold | Reraise | $141.25 | $31.46 | -$1.66 |
| Raise | Call | Call | Call | $145.32 | $31.07 | -$3.26 |
| Raise | Call | Call | Reraise | $147.57 | $32.05 | -$2.43 |
| Raise | Reraise | Call | Reraise | $163.56 | $35.49 | -$4.09 |
| Raise | Reraise | Reraise | Reraise | $164.40 | $35.54 | -$4.35 |

Each row in the table shows a set of actions and the net dollars won per hand which result for each pair. In general, the actions in the table are more aggressive from top to bottom and, although not shown, the win rates for each hand increase with the aggressiveness. The money won for pocket kings increases with the aggressiveness. With one exception, this is also true to pocket nines. Pocket fours, a much weaker hand, is a different story. The most effective way to play them is very situation dependent. Raise if the pot is unraised, call one raise, fold if there are two raises. Once in, if the pot is raised back ("later action"), reraise. Although player 10 never makes money with pocket fours, considering the forced bet of $20.00 each hand, the loss of -$1.66 is optimum.

*© 1994, Wilson Software. Bob Wilson of Wilson Software is the creator of acclaimed programs such as* Turbo Texas Hold'em, Turbo Seven Card Stud, *and* Turbo Omaha High-Low Split*. The test results in this article were obtained using the new Version 4.0 of* Turbo Texas Hold'em*. All Wilson Software products are available from ConJelCo.* ♠

## THE CASINO RATE
*Anthony Curtis*

In his book *Comp City,* Max Rubin writes: "Virtually any rated gambler, table games or slots, can get a casino rate at anywhere from a 35% to 70% savings off the normal rack rate."

Most players have heard of the casino rate; it's a room discount casinos extend to moderate-level gamblers. But what is the true extent of the discount, and how much do you have to gamble to get it? I wanted to know, and so initiated a study on the subject for publication in my newsletter, the *Las Vegas Advisor.* To make the study as comprehensive as possible, I enlisted a group of students from a college statistics class to assist.

The two goals of this study were: 1) to verify that the savings from the casino rate really do run as high as 70%, and 2) to obtain some insight into the best way to secure it. To do this, the students posed as blackjack players who had just hit town, were prepared to gamble, and had not yet check into a hotel (everyone on the team was an adult, ranging in age from 21 to 40). Thirty-seven casinos were surveyed.

### Discounts

Getting information was difficult, but the team did manage to obtain a quoted casino rate from 23 of the 37 casinos. The discounts ranged from a low of 24% off the rack rate (*Santa Fe*) to a high of 100% (*Stardust, Imperial Palace, and Four Queens*). At 100%, the casino rate actually became a room comp. The average discount turned out to be 50%. The

most common bet-size requirement is $25, and we can conclude that four hours of $25 action will get you the casino rate almost anywhere, including places like *The Mirage* and *MGM Grand*. How about bet requirements lower than that? The following casinos indicated a required bet of less than $25:

$15 Level:   *Fitzgeralds, Fremont, Harrah's*
$10 Level:   *Arizona Charlie's, Maxim, Nevada Palace, Santa Fe*
$5 Level:    *Horseshoe, Excalibur,* (*Gold Coast* for a paltry $2 discount)

The *California* said that it only needed to see a player wager $200 in total action. Likewise, the *Flamingo* required $500 total action. These requirements equate with less than two hours of play at $5 per hand.

Regarding playing time, four hours seems to be the requirement throughout Las Vegas. And if you are realistic about securing the casino rate at a $5 betting level, you'll probably have to convince them that you intend to play much more than that. One student was told that $5 bettors have to play "long and strong."

### Practicalities

It's evident that a great deal of impreciseness is involved in the process. After reviewing the data and talking with his students, class instructor Robert Stauffer, Jr. provided the following summary:

Some casinos were friendly and volunteered the information. Most casinos suggested we check into the hotel first, and then play for awhile. They would rate our play and give us an appropriate discount. When they were pushed they usually came up with a number, but it was a struggle. A few casinos were very uncooperative and never did provide any data. It became clear that many casinos either did not have a clear policy or that their employees did not know it. Occasionally two students went to the same casino, talked to two different pit bosses, and got two different rates. The casino rate may be a function of what kind of mood the pit boss is in.

The casinos don't seem to fully understand the game, which means that it's possible for you to play it better than they do.

### More Notes

Don't be surprised if bosses are vague or evasive. Many will insist that you "get rated" first. This delays him having to do any work, and it lessens his exposure to giving away too much (if you're rated, he can more accurately gauge your loss potential). The casinos that steadfastly insisted players be rated first were: *Aladdin, Barbary Coast, Hacienda, Hilton, Las Vegas Club, Luxor, Palace Station, Sahara, San Remo, Showboat, and Tropicana.*

Most requests were handled right in the pit, though in some cases a specific boss with the power to "make the call" had to be summoned. A few were told to go to the cage and ask for a casino host (*MGM Grand, Bally's, Fitzgeralds*).

Appearance is important. Some of the younger students experienced difficulty which they attributed to "not being taken seriously."

One student conjectured that the number of people in the casino at any given time would have a bearing on the decision, a hypothesis that was later supported by a boss who stated that occupancy levels mattered. You'll be more successful during slow times.

*© 1994, Huntington Press. Anthony Curtis is an accomplished gambler and the publisher of the* Las Vegas Advisor, *a monthly newsletter of Las Vegas values. This article was adapted from one which appeared in the July 1994 issue. Huntington Press also publishes highly recommend books including* Comp City, Bargain City, *and* The Theory of Blackjack. *All Huntington Press products are available from ConJelCo.*

### CONJELCO ON THE INTERNET
*Chuck Weinstock*

It seems like everywhere you turn these days you're reading about the information highway. Surely there's no reason for a publication on gambling to have an article on *that* subject, is there?

Well, if you've been paying attention elsewhere in this issue, you'll already be aware of why an article about the national information highway is appropriate in *The Intelligent Gambler*. You see, ConJelCo is now one of the few purveyors of gambling information on the Internet.

The Internet, in case you've been too busy reading Sklansky and Malmuth, is an international network of computers. On this network you can find informa-

### Casino Rate

| Casino | Avg. Bet | Hours Played | Rack Rate | Casino Rate | Discount % |
|---|---|---|---|---|---|
| Arizona Charlie's | $15 | 4 | $45 | $25 | 44% |
| Desert Inn | $125 | 4 | $180 | $115 | 36% |
| Fitzgeralds | $15 | 4 | $34 | $20 | 41% |
| Four Queens | $50 | 4 | $47 | $0 | 100% |
| Golden Nugget | $25 | 4 | $65 | $45 | 31% |
| Harrah's | $15 | 4 | $85 | $45 | 47% |
| Horseshoe | $5 | 4 | $60 | $30 | 50% |
| Imperial Palace | $25 | 4 | $55 | $0 | 100% |
| Mirage | $25 | 4 | $159 | $69 | 57% |
| Nevada Palace | $10 | 5 | $33 | $25 | 24% |
| Rio | $25 | 4 | $103 | $56 | 46% |
| Riviera | $25 | 4 | $59 | $25 | 58% |
| Sands | $25 | 4 | $85 | $35 | 59% |
| Santa Fe | $15 | 4 | $35 | $25 | 29% |
| Stardust | $25 | 4 | $30 | $0 | 100% |
| Treasure Island | $25 | 4 | $119 | $60 | 50% |

tion on most any subject, from weather reports to the latest speech given by the President.

One of the subjects you can get information on over the Internet is gambling. And, ConJelCo is the major provider of information on this subject so dear to our hearts.

If you have a computer with access to the Internet, you'll be able to take advantage of this free service from ConJelCo. You can get access to the Internet through such national providers as *America Online*, *Compuserve*, *Delphi*, and *Netcom*.

The most basic use of the Internet is via e-mail. For instance, if you'd like to place an order, get product information, or an up-to-date catalog from ConJelCo, you can send e-mail to *orders@conjelco.com*, with your request.

If you have something called ftp access, you can begin to explore more of the services offered by ConJelCo. For instance, we have demonstrations of ConJelCo software including *CrapSim* and *Blackjack Trainer* on our ftp server. We also have demonstrations of Wilson Software's products including *Turbo Texas Hold'em*, used in Bob Wilson's article. There's lots more to explore, including an always up-to-date ConJelCo catalog.
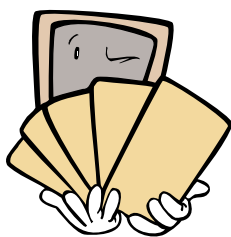
Here's how you access our ftp server. First either type *ftp conjelco.com* or establish a connection to the server using instructions given by your service provider. When asked for your username, respond *anonymous*. Supply your real name when asked for a password. Once you are connected you type *cd pub*, to connect to our public directory. You can type *get readme.txt* to obtain a file listing what's in the directory. If you see something listed that you want, you simply type: *get* <filename> where you replace <filename> with the name of the file you want to obtain. If the filename ends with

.zip or .Z, you'll need to type the command *binary* before retrieving the file. Again, the instructions for your service may vary from the above.

If you have access to the World Wide Web, via programs like *Mosaic* or *Netscape*, you can access our Web server. This server contains an expanded version of our catalog, all of the demos, free software, and papers contained on our ftp server, and lots of other goodies for the serious gambler. You can even order products from our catalog using an on-line order form available on our World Wide Web server.

Our World Wide Web server is constantly evolving. You'll want to check it out frequently. To do so, you simply provide the URL *http://www.conjelco.com* to your World Wide Web browser.

If you make use of our server and have suggestions for improvements or additional services that we can provide, we'd love to hear from you. Send your suggestions via e-mail to *weinstock@conjelco.com*. ♠

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**PRODUCT ANNOUNCEMENTS**
*Chuck Weinstock*

With this issue of *The Intelligent Gambler*, ConJelCo is pleased to announce two new products, and to call your attention to one that was released after the last issue of *IG* went to press.

### Ken Elliott's CrapSim Version 2.0

The first is actually an update of our very popular *Ken Elliott's CrapSim*. In honor of its greatly enhanced simulation capabilities, *CrapSim* has been renamed *CrapSim Professional*. *CrapSim Pro* now consists of two major programs—an interactive craps game (soon to be available separately) and a craps system simulator—both of which are unique among the current crop of casino software products.

The interactive game teaches you the intricacies of casino craps, depicting in improved VGA graphics a casino craps layout and allowing you to place all bets just as they are made in a casino. This includes buy and lay bets, place bets to win or lose, hop bets, and all odds bets. *CrapSim* keeps extensive statistics for

you to study, such as bankroll fluctuations (which you can graphically display), points made/points missed ratio, and the length of streaks. It supplies a tutoring function, a macro facility for quick bet placement, extensive on-line help, and a comprehensive manual that explains the game of craps as well as how to use the program.

The system simulator program is used to perform high-speed simulations of practically any system you can devise for playing craps. You can create your own systems, or use one of over 20 pre-set systems (such as Martingale, Oscar, D'Alembert, etc.) supplied with the program. The simulator will play the system repeatedly, and report statistical information (average, standard deviation, etc.) of such things as bet handle, bankroll, and average number of rolls per "session" in both graphical and tabular format. You can also export the data in a format readable by most spreadsheet and database programs for further analysis. *CrapSim Pro* requires DOS 3.0 or higher, VGA or higher graphics, and a mouse.

As this issue of *The Intelligent Gambler* goes to press, *CrapSim Professional* is in final pre-release testing. We anticipate a release date of January 1, 1995. *CrapSim Professional* will retail for $79.95, but we're offering our regular customers a special pre-publication offer.

From now through December 31, 1994, you can order *CrapSim Professional* for the specially reduced price of $69.95, or upgrade for $34.95 ($39.95 after December 31.) If you purchased your copy of *CrapSim 1.0* after November 1, 1994, send us proof of the date of purchase along with your registration card and we'll send you *CrapSim Professional* for $19.95. All prices are plus $5.00 shipping and handling. Your copy of *CrapSim Professional* will be sent as soon as it is released.

### Winning Low-Limit Hold'em

The other new ConJelCo product is Lee Jones's new book, *Winning Low-Limit Hold'em*. This is *the* book for hold'em novices and low-limit veterans alike. It doesn't overwhelm you with tables or statistics, and doesn't spend a lot of time on sophisticated plays. It simply gives

you good solid strategies and tactics that will consistently beat low-limit hold'em games anywhere in the world.

We're also having a special pre-publication offer for the book. It's scheduled to be available on December 1, 1994 and will retail for $19.95. However, from now through December 31, 1994, you can order a copy of *Winning Low-Limit Hold'em* for $17.95 plus $3.00 shipping and handling.

### Percentage Hold'em

Since the last issue of *The Intelligent Gambler*, ConJelCo has released the DOS program *Percentage Hold'em*, an enhanced version of the software that was used to produce the tables in the book of the same name by Justin Case.

*Percentage Hold'em* allows the comparison of hold'em hands via either simulation (for quick answers) or via mathematical analysis (for precise answers) on your personal computer. This can be done prior to the flop, with a specific flop, and with a specific turn. Percentage Hold'em retails for $30.00 plus $3.00 shipping and handling.

### Blackjack Trainer

What about *Blackjack Trainer*? We received many suggestions for new features for our *Blackjack Trainer* for the Macintosh and Windows and hope to have information about an upgrade of these programs in the next issue of *The Intelligent Gambler*.

Expected new features include more extensive counting drills, better statistics with perhaps graphing for both simulation and practice, the ability to specify a count range for strategy decisions, better support for Wonging, multi-parameter counts, casino specific rule-sets, Kelly betting, and more. If you don't see your favorite enhancement above, chances are we already have it on our list, but drop us a line just to be sure.

### Future Products

As a company policy ConJelCo doesn't announce products that are not nearly ready for release. In the next issue of *The Intelligent Gambler* we hope to be able to officially announce several ConJelCo products currently under development.

ConJelCo is always interested in expanding its product offerings. If you have a book, or software that you think ConJelCo would be interested in publishing, please get in touch with us.

We're also interested in expanding our catalog to include additional *quality* gambling related items. If you have such items, please send us a sample. ♠

## The Winning Session
### Chuck Weinstock

One issue of the ConJelCo Catalog looks pretty much like another, so we'll use this section to call your attention to some of the items that have been added to the catalog since the last edition of *The Intelligent Gambler*.

### Blackjack

We've added two blackjack products to the catalog in the past six months, one book and one software product.

There's nothing else quite like *Cheating at Blackjack* on the market at the moment. Written by "Dustin Marks" it describes a different way to beat the game of blackjack—through cheating. The author has used the techniques that he describes to beat the casinos out of much more money per hour than a card counter could. The techniques are mostly illegal, and all dubious, and make for a very interesting read.

In a recent issue of *Blackjack Forum*, Arnold Snyder named our *Blackjack Trainer* one the top eight blackjack software products on the market. In that same article he highlighted an exciting new piece of software, *Blackjack Subsets*. He named it the "Best Advanced Analysis Software." This is a tool for the serious player interested in thoroughly analyzing the game. It allows you to study the effects of removal via exact analysis. A very powerful tool.

### Poker

Over the past year or so our customers seem to have developed an increased interest in poker. The contents of the ConJelCo Catalog reflect this interest. Besides our own new offerings in this area (the software, *Percentage Hold'em*, and the book *Winning Low-Limit*

*Hold'em*), we've added a number of new poker related items to the catalog.

The first new product is not actually new, but instead a revision. David Sklansky and Mason Malmuth have just released an updated version of their book *Hold'em Poker for Advanced Players*, making the best book on the subject even better by adding more examples and more detailed explanations of the concepts.

Mike Caro's new book *The Body Language of Poker* is actually a reprint of his important *Caro's Book of Tells*. It will help you win more by learning to read what your opponent has by his body language.

Our software, *Percentage Hold'em* was used to create a book of the same name which shows how various hands perform against each other in various kinds of games.

Wilson Software's *Turbo Texas Hold'em* has been enhanced and version 4.0 is now available. Among other enhancements this version has greatly expanded player profiles allowing tougher, more realistic play. Mike Caro calls it "A steal for under $500."

*Sklansky, the Video* is our newest video offering. This is a ninety minute video featuring David Sklansky teaching general poker concepts and strategies, along with specific sections on Texas Hold'em, 7 Card Stud, and Omaha High-Low Split with a qualifier.

### Other Gambling

Max Rubin's *Comp City*, has been out since June. An excerpt of this excellent book was published in the last *IG*.

Mason Malmuth's excellent *Gambling Theory and Other Topics* has recently been revised and expanded to bring it up-to-date. Especially good is the section on poker tournament strategy.

We've also added *Gambling Scams* by Darwin Ortiz. This book describes the techniques used by professional cheats and con men.

We're adding new products to our catalog all the time. If you hear of something you'd like, chances are we are already carrying it. If we aren't, we'll get it for you if we can. Just let us know. ♠