# TABLE GAME MANAGEMENT FOR THE SMALL CASINO, PART 1

By Bill Zender

*Author's Note: This article is part one of several articles on table game management for the small casino. Look for another installment next month in Casino Enterprise Management magazine.*

How many smaller table games operations are found throughout North America? I would imagine quite a few. However, most information printed in books and magazines has to deal with larger operations: Megaresorts that provide their customers with several thousand slot and video machines and as many as 100 table games or more. Most of these casinos offer table maximum limits that can reach as high as $25,000 or $50,000 per hand. Many of these limits exceed a smaller operation's entire bankroll! The larger casinos are usually supported by a large hotel of 500 or more rooms and suites. Of the several casino management books that come to mind, all discuss the operations of a casino and table games department that supports several dozen table games of various types and limits. What about the smaller operations? What material is available for those operations and their management personnel? Other than a few articles here and there, there's not much written on smaller operations. There is a need for information regarding the operation of the small casino and table games, as extrapolating information found on operating a large number of table games and applying it to an operation that consists of six to eight tables isn't always effective. The manager who is responsible for a small number of games needs to possess a different assortment of gaming skills than that of his major-casino counterpart.

## What Is a Small Casino?

A smaller casino is usually located in a "backwater" region of the country, with limited ability to market to customers residing more than 100 miles from its location. The small casino is not a destination resort, nor in a position to attract serious gamblers or experienced employees. It is in business to satisfy the local gamblers who may frequent the establishment several times per week.

The physical layout of the casino is usually limited to 10,000 to 15,000 square feet that supports eight tables or less. The limits on these tables are very low compared with larger casinos, operating with minimum betting limits of $3 and maximums limits of $100 to $200. There is no such thing as a table game "mix" strategy. The pit consists of four or more blackjack tables, with an occasional alternative game or possibly a roulette table. Most of these casinos are restricted to a small bankroll and would have a difficult time absorbing losses of any great magnitude. The facility will include a coffee shop-style restaurant or snack bar and a liquor bar or small lounge. The casino's primary income is derived from its slot and/or video machines.

I remember casinos that were even smaller. During my time with the Nevada Gaming Control Board (NGCB), I used to frequent Jim Kelly's Nugget in downtown Reno, Nev., on Virginia Street. In addition to a dynamite chili cheese omelet, the casino offered a single blackjack table. The minimum bet was $1, the maximum was $50 and they dealt the single deck all the way to the bottom (Did I mention this was in the early 1980s?). During my tenure with the NGCB, I used to travel throughout Nevada visiting all the casinos in the north and northeast. In Lovelock, Nev., there was a small casino known as Sturgeon's Log Cabin (now known as Sturgeon's Inn and Casino). It looked like a log cabin and offered the gambling customer a lone blackjack game. Five nights a week, around 6 p.m., a dealer would show up with a locked chip tray under her arm. She would place the chip tray into the vacant opening on the blackjack table, unlock the lid, remove a single deck of cards and start dealing. When she went on her break, she would lock the chip tray lid, place it under her arm and go into the restaurant for 15 to 20 minutes.

During my "break-in" years in gaming, I worked at several casinos that would be considered small by today's standards. I originally broke in dealing at the Royal Inn Casino in Las Vegas. The casino supported 13 table games, 10 blackjack tables, a crap table, a mini-baccarat table and a roulette table. We dealt to a $200 maximum with a minimum of $1 to $5. Even though the limit was $200, management would let anyone with money play $200 on all seven spots of the table. I remember one occasion when a blackjack player had us beaten at one point for $30,000, and management was in a complete panic. The customer made the mistake of staying too long, and the casino won all the money back.

I worked at the Hotel Nevada in Las Vegas as a floor supervisor in an 8-table pit with six blackjack tables, a roulette table and a craps table. Again, the casino offered a minimum limit of $1 and a maximum limit of $200. My last working stint in a small casino was also in Las Vegas at the Western Hotel and Casino—the "Jewel of Fremont Street," as we would refer to it. When table games were first introduced at the Western, it supported three blackjack games and a roulette game that

no one knew how to deal. The limit on one blackjack table was 50 cents, but the majority was either $1 or $2 with a $50 maximum. Several years later, when I worked at the Western for a second time, the pit had expanded to five blackjack tables and a roulette game, with a maximum limit of $100.

## Determining Mathematical House Advantage and What It Really Means

Your casino offers a 6-deck game with the rules that direct the dealer to hit soft 17 and allow the players to double down after splitting a hand. Your general manager asks you to add the rule allowing players to re-split aces up four total hands (but only one card drawn to each hand). The general manager wants to know how the change will affect the house advantage and the hold percentage. What do you tell her?

I still find it distressing that many casino executives don't know exactly what their blackjack game's mathematical edge is based on the number of decks and rules when the player follow perfect basic strategy. This is a metric in gaming that everyone should know and be able to recite instantaneously. Think of the previously mentioned blackjack game example. What is the "basic" mathematical house advantage based on six decks and the rules that are listed? Can you answer this question?

A single deck game where the house stands on all 17s, pays 3:2 on blackjacks and allows the player to double on any two cards and split any two like cards is a "dead-even" game under the basic strategy guidelines: 0 percent house advantage (H/A). In the previous example, the casino used six decks. By adding five more decks to the single deck game, the house raises its H/A by 0.54 percent. The addition of more decks, or even one deck to raise the game to double deck, increases the house advantage (in this case, 0.32 percent). The effect of adding more decks levels off around eight decks (0.57 percent H/A) and an increase past that point is worthless.

What about the rules? The previously mentioned casino offered two rules: hitting soft 17 and doubling down after splitting. Hitting soft 17 is a very important rule for the house. It raises the H/A by 0.2 percent. Giving the dealer the ability to hit soft 17 allows the dealer to increase their hand-total on the average. As far as I'm concerned, this is a "must" rule for all smaller casinos, and it should be strongly considered for all casinos, regardless of size or wagering limits. The rule of doubling after a split affects the H/A in a contrary manner. It slightly decreases the house advantage by 0.14 percent. Why do casinos offer it? Doubling after splitting was once used as a marketing tool to attempt to drive blackjack play. Now practically every casino offers it in order to be competitive with others in their market. The good news about doubling after splitting is that most players don't know how to do it correctly. They either don't double when they should or double when they absolutely shouldn't. In actuality, the cost to the H/A is about 0.06 percent.

Based on this quick explanation, what is the H/A percentage of the aforementioned casino? If you add the number of decks (six) with the two rules (hitting soft 17 and doubling after splitting), the "basic" mathematical H/A percent is 0.6 percent (0.54 + 0.2 – 0.14 = 0.6 percent). A H/A of 0.6 percent means that for every wager placed by the basic-strategy customers at the table, the house expects to win 0.6 percent of every dollar. For example, if a basic-strategy player wagers $100 per hand, the house expects to win 60 cents.

What changes will occur to the house advantage if the general manager gets her way and the casino adds the rule for re-splitting aces? Re-splitting aces is also a customer-friendly rule and costs the casino 0.06 percent, or 6 cents of every $100 wagered by the basic strategist. Re-splitting aces slightly lowers the H/A from 0.6 percent to 0.54 percent. One point to mention: Thank goodness not all blackjack players use basic strategy. As a matter of fact, very few blackjack players take the time to learn basic strategy. An overwhelming majority of players rely on what is known as a "common strategy." The person using the common strategy is giving back a nice piece of every dollar they wager, approximately 0.9 percent to 1 percent. Based on the common strategist's play, the casino can expect to win about 1.5 percent of every wager. By the way, your general manager still wants to know what effect adding re-splitting of aces will have on the house advantage and the win. What do you tell her? *Note: We will discuss hold percentage in a later article.*

## Why Are the Mathematics So Important?

Situation: You manage a small table game pit of half a dozen blackjack tables. During the grave shift (2:00 to 10:00 a.m.), management feels there is enough table game business to operate a grave shift three days a week (Friday morning through Sunday morning). During the Friday through Sunday grave shift, they open only one table. The pit is staffed with one floor supervisor/manager and two dealers. The single table stays active all night, with an average of three players wagering an average of $4. The game is dealt from a 6-deck shoe with two rules: hit soft 17 and double after splitting. The game is subject to a "basic" house advantage of 0.6 percent, but with the addition of anticipated player errors, the actual H/A is 1.5 percent. Your dealers average about 60 rounds dealt on the table per hour. Based on this information, what is that table's anticipated revenue for the eight-hour grave shift? Please take a moment and see if you can calculate the revenue based on the previously mentioned information.

Every casino executive who is tasked with the responsibility of managing table games needs to be able to project theoretical win and anticipated revenue for any given period of time. Not only do you need to know what a table game (or group of table games) can produce, but you also need to be able to estimate the costs involved with operating those games and determine whether or not the game(s) is/are profitable. Do you have the ability to calculate an answer to the previous question?

The equation formula for calculating theoretical win (also known as T-win) is simple. It is expressed using the following variables:

Average number of player bets X average bets X total house advantage percentage X estimated rounds per hour X hours = T-win

You need to replace the different variable explanations with the corresponding variable number mentioned in the situation description. The equation now reads:

Average number of player bets (three) X average bets ($4) X total house advantage percentage (1.5 percent) X estimated rounds per hour (60) X hours (eight) = T-win; or 3 X $4 X 1.5 percent X 60 X 8 =T-win; or $12 X 1.5 percent X 480 = $86.40

Some of you might point out that the actual win/loss will be far from this figure. The shift could lose several hundred dollars or win several hundred dollars. This is called game volatility and will be discussed in later articles. What the wise executive has to do is focus on the "win potential" for the shift. The executive needs to understand how much the game will produce and have the ability to determine whether or not this grave shift stands to make a long-term profit (or at least break even) from its operation.

Going back to the original description of this grave shift's situation, will the projected revenue of $86.40 support the cost of two dealers and a floor supervisor?

## Grave Shift at the Western Casino

In the early 1980s I was transferred from the parent company to one

of its smaller casinos in downtown Las Vegas. I took over the grave shift at the Western Casino, which was in terrible shape at the time. The hold percentage was around 1 percent and the shift was deemed unprofitable. Management planned to close the table games on the grave shift unless something could be done to at least operate the shift at break-even. For various reasons, the shift wasn't performing to its possible revenue potential. I could correct that, but even with the anticipated increase in revenue, could the shift break even? Two nights a week I was required to open two blackjack tables, while the other five nights we could get by with opening only one game. When I first took over the shift, the previous shift manager scheduled three dealers on the two-table nights and two dealers on the one-table nights. The justification was that there would be a dealer for each game and a dealer relief. After calculating my anticipated monthly T-win, I discovered that the shift didn't have a hope to break even when operating 16 dealer shifts and seven manager shifts per week. Was there a solution to this problem, or would I have to suggest to management that they needed to close the grave shift? The solution was quite simple: I eliminated one dealer shift per night and had the supervisor "push" into the games to relieve the dealers. The elimination of seven dealer shifts per week allowed the grave shift to perform greater than just breaking even and produced a positive cash flow, even with free drinks served at the table.

## Other Important House Advantage Percentages

Following, is a list of changes to the mathematical house advantage that occur when decks are added or the rules of the game are modified. The baseline mathematical house advantage you should use is 0 percent. This baseline percentage is based on a single-deck game, stand on all 17s, split any like pair (including any ten-value cards) and double down on any two cards.

**Table 1: Deck and Rule Change Effect in Blackjack**

| Decks Used | Changes in H/A percent |
|---|---|
| Single Deck | 0 percent |
| Double Deck | 0.32 percent |
| Four Decks | 0.48 percent |
| Six Decks | 0.54 percent |
| Eight Decks | 0.57 percent |
| **Rules Used** | **Changes in H/A percent** |
| Hit Soft 17 | 0.20 percent |
| Double after splitting | -0.14 percent |
| Double on 10/11 only | 0.18 percent |
| Double on 9/10/11 only | 0.09 percent |
| Re-splitting Aces | -0.06 percent |
| Surrender (1 deck) | -0.02 percent |
| Surrender (multi decks) | -0.06 percent |
| 6:5 on blackjack | 1.38 percent |

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