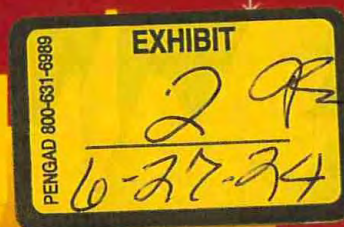
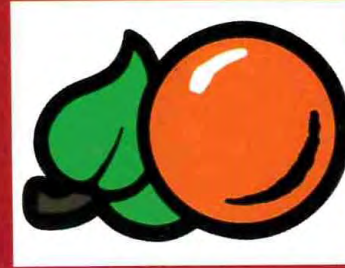


DWIGHT AND LOUISE CREVELT'S

MANIA

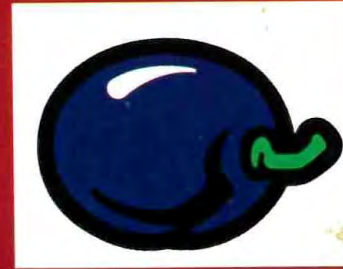


FIND OUT WHY AN EASY-LOOKING MACHINE MIGHT BE THE HARDEST TO HIT; WHY SOME PLAYERS WIN MORE THAN OTHERS; WHICH MACHINES TO AVOID; WHERE TO PLAY, AND WHERE NOT TO.



THE AUTHORS TAKE YOU INSIDE THE CASINO OPERATION, INSIDE THE MANUFACTURERS, AND INSIDE THE MACHINES. A REVEALING LOOK AT TODAY'S SLOTS AND VIDEO POKER.

NO OTHER BOOK CAN GIVE YOU A BETTER
"INSIDE" CHANCE TO WIN!



SLOT MACHINE

MANIA

DWIGHT E. CREVELT

LOUISE G. CREVELT

GOLLEHON

GRAND RAPIDS, MICHIGAN

Contents

INTRODUCTION	1
1. MACHINES AND HOW THEY WORK	11
2. PERCENTAGES	29
3. SPECIALTY MACHINES	45
4. JACKPOTS	75
5. COMMON MISCONCEPTIONS	87
6. MONEY MANAGEMENT	98
7. WHERE TO PLAY	110
8. CHEATING: METHODS AND CONSEQUENCES	134
9. REGULATORY SAFEGUARDS	161
10. SLOT MACHINE PROMOTIONS	174
11. SUPERSTITIONS	189
12. MANUFACTURERS	203
13. SLOTS' PLACE IN THE BIG PICTURE	213
14. THE FUTURE OF SLOTS	221
BIBLIOGRAPHY	228

Copyright © 1988
by Gollehon Press, Inc.

ALL RIGHTS RESERVED under international and Pan-American copyright conventions.

No part of this book may be reproduced or copied in any form or by any means, including graphic, electronic, mechanical, or information and retrieval systems, without written permission of the publisher.

Newspaper or magazine writers may quote brief passages for inclusion in a feature article or review, provided full credit is given.

MANUFACTURED IN THE UNITED STATES OF AMERICA

Library of Congress Catalog Card Number: 87-83322

ISBN 0-914839-21-7
(International Standard Book Number)

Photo of author, courtesy of Gemini Studios.

The authors wish to express appreciation to those who consented to interviews or shared their knowledge, experiences, and material for this work including:

International Game Technology and Tom Potters,
Director of Product Information Services

Russ Scott, Casino Host, Maxim Hotel

John Stroup, Slot Manager,
Las Vegas Flamingo Hilton

Dan Reaser, Chief Deputy Attorney General for the
Gaming Commission of the State of Nevada

Debbie Crumm, Public Relations Department,
Golden Nugget Casino/Hotel

Anonymous members, past and present, of the Gaming Control Board, the manufacturing industry, the casinos, and the slot cheating community.

Special thanks to John Gollehon for his patience in waiting for us to get it all together.

Foreword

Don't ask me the month, or the year, but it was a Sunday . . . and when we got up that morning our first thoughts were to do something to get us out of the casino. We had been in Las Vegas for a few days and although I consider myself a good player, I was on the short end of about two grand in markers. Indeed, we decided not to even eat in the casino, but to eat on the way. To where? No difference. Just as long as where we were going, there weren't any blackjack tables, or craps tables or slot machines, or even a sports book. "Just get me the hell out of here!" Ever had the same feeling?

It's funny. I've written nearly a dozen books about

gambling, published several others, and most people who know me wonder why I don't live in Las Vegas. With that kind of expertise, they surmise, why doesn't he make his living at the tables?

I'm not Jimmy Connors who can beat the pants off most tennis players, and I'm not Jack Nicklaus or a beginning pro out looking for a foursome and a \$20 Nassau. These guys are experts, and their games can support them. But in the games in the casino, there are no experts. It makes no difference how well you know the rules, or the skills (if there are any), or the stories, or the casino managers, or anything. Even at blackjack today, I don't know of any casino that won't welcome any player, expert or not. You can't beat the odds with expertise! Am I an expert? Well, I know the games as well as anyone, but I can't make the dice jump off a seven; I can't expertly throw the dice like Joe Montana throws a football; and I can't magically make the cards come out of the shoe to give me blackjacks. I don't have a photographic memory, so I can't count down a 6-deck shoe that's been cut a third of the way.

Like I said earlier, "Just get me out of the casino, away from the tables, to the mountains, Lake Mead, the Nevada Test Site. . . anywhere!"

Valet brought us our car, and we headed out towards Hoover Dam and Lake Mead where every other stereotyped "tourist" heads when the hundred dollar bills thin out in his wallet. We stopped for a cheap breakfast, an antique shop or two along the way, and then, almost there, we saw a turn-off for Laughlin. Laughlin? I had heard about the town and how pretty the Colorado River is down there, and how picturesque the drive is through the desert. So why not.

After what seemed like four or five hours, and a lot of

desert (a lot more than I really wanted to see), we finally got there and gee what a thrill it was. Five casinos or so stuck along the river like casinos in Las Vegas, casinos in Reno, casinos in Lake Tahoe, casinos in Atlantic City. Inside, there were slot machines, and more slot machines. . . slot machines all over the place! The casinos all looked alike — noisy, low ceilings, players bumping into one another, aisles that were so crowded you wondered how the local fire marshall could approve the place. But I guarantee you, if anyone had to empty the place in a hurry, you would need your boy scout compass to get out of the maze. . . or a map.

Let's see. Go down the first aisle of quarter poker machines, turn left at the big million dollar display board, head straight past all the nickel machines, hang a right at the one dollar 3-reelers, then right again at the change-booth, look for the "Big Bertha" machine, and you're at the door. But this is the door to the gift shops! Where's the main entrance?!

It always amazes me how the guys who designed these places could actually find room for gift shops, restaurants, and restrooms. Now I hear that some casinos are thinking about putting slot machines in the restrooms! If you thought your wife took a long time to "powder her nose," with slots in there we could be talking hours and hours!

After leaving the casino, we noticed that the parking lots were full. One bus after another. Later, we learned that most of the people who take the buses to Laughlin are from retirement communities in Arizona. So many of our senior citizens living in Arizona have little to do except enjoy the sun, the desert, and Laughlin's thousands of slot machines. My guess is when the Social Security checks

come in the mail on Tuesday, Laughlin's hopping on Wednesday!

Make no mistake, Laughlin is in Nevada, barely. But across the river *is* Arizona; and Laughlin, for all intents and purposes, is Arizona's legalized gambling. Laughlin is in Arizona if you go by all the license plates on the cars in the parking lots.

After we finally found our own car (why is it rental cars all look alike?), we couldn't help but notice the pretty mountains nearby. My 10-year-old son, Johnny, loves to climb the mountains and look for rocks. He's not ready for Mt. Everest, but he really enjoys climbing mountains. I don't. So I tell him the mountains are full of rattlesnakes but he hasn't bought that yet. I'm tempted to invest in one of those rubber snakes, and put an end to all this foolishness.

Anyhow, we went mountain climbing and looking for rocks (you know, the blue, red, or green rocks, not the plain brown and gray ones). After we loaded up our trunk with half of Laughlin's rocks, we left town, wondering about two things: why did we come here in the first place, and why is the car riding so low?

On the way back to Las Vegas, I told my wife that these people playing slot machines are all crazy. They're maniacs! Slot machine maniacs! Someone has to do a book about this phenomenon, and the title was too easy. *Slot Machine Mania!*

Not a book about old machines. Old machines are old news. And no pretty pictures of machines. If we included pictures of today's most popular machines, sure enough, three days after the book came out, the machines would be obsolete. What I really wanted was a book not so much about the machines themselves, but about the people who

play them, and the mania that has been let loose from these crazy contraptions.

You'll enjoy this book. I promise you. And if you decide to play the machines, even if you never have before, promise *me* that you'll only take with you the money you can afford to lose. Because you probably will. And if that doesn't work, walk out of the casino and head straight for the mountains. Nevada has lots of pretty mountains covered with lots of pretty rocks. Mountain climbing and rock hunting are free!

But don't try this in Atlantic City. It only works in Nevada. In Atlantic City, you can't even find sea shells anymore. I wonder if they have rattlesnakes.

Have fun!

John Gollehon

This book is dedicated to Matthew Henry Crevelt, born appropriately on April 21, 1987, weight 7 pounds 11 ounces, height 21 inches and to his mother Jean Anne Crevelt. Also, to his brother William Michael, sister Michelle Anne, and grandfather James R. Crevelt for their patience and understanding.

INTRODUCTION

“Delightful Madness,” “Pure Insanity,” “Hypnotic Fascination,” “Glittering Gluttony,” “Sensual Greed,” “Gaudy Delight,” “Lurid Luck,” “Charming Chance,” “Ecstatic Folly,” “Foolish Fantasy,” “Crazy Clunking,” “Hopeless Hope,” and “Ultimate Urge.” These are a few of the alliterative and contradictory epithets we’ve heard to describe this phenomenon we call “Slot Machine Mania.”

We call it “Mania” because slot playing makes no logical sense, but it has captured the imagination and attention of pleasure-seekers everywhere. It is one of the most popular and lucrative forms of gambling in the

2 Slot Machine Mania

world. Popular with players and lucrative for the gaming industry, that is.

Walking through a busy casino and observing people chucking coins into slots and pulling handles as fast as they can while whistles blow, bells ring, music plays, and winners scream with delight must be the modern equivalent to a Roman orgy. It surpasses the excitement of being a mere spectator at the Olympics or the Super Bowl. Why? Because everyone can play! And it's so easy!

Easy? Of course! You don't have to know anything to be able to participate. You can easily become caught up in the player's excitement and find it virtually impossible to resist "trying your luck." You can easily be tempted to try for a bigger win after you've won a few coins, especially if the next machine is spitting out coins by the bucketful. It's easy to become mesmerized by spinning wheels, flashing lights, and the challenge of playing cards dealt so quickly you can't put in coins fast enough to keep up with the machine. It's easy to keep reaching into the tray of dropped coins and put them right back into the hungry machine. It's easy to reach into your purse or wallet for more bills when the tray is empty and you still haven't hit the jackpot and its promise of instant riches. It's easy to become hooked on playing slots because it's "only a game."

Only a game? True. But it takes real money to play. And the consequences of losing are real too. Why then do so many educated, intelligent, astute and otherwise cautious people exhibit such illogical behavior? Perhaps we should ask Mr. Spock!

We will try to answer these questions you have always wanted to ask and dispel the myths and misconceptions fostered by so-called "experts." We have tried to analyze

this maniacal phenomenon and record for everyone the in's and out's of this fascinating and sometimes painful pleasure.

Our intention is not to encourage slot playing as a way to earn a living, nor do we encourage you to play if you have the slightest reservation. Our purpose is solely to give you more knowledge about slots and slot playing as a recreational pastime. We hope that after reading this book you will experience more "highs" than "lows," and have fun along the way.

Having fun is at least half the reason most players pull the handles. The other half is, of course, the chance of winning. Trying to overcome ridiculous odds. That's how otherwise ordinary people become folk heroes. They accomplish the seemingly impossible feat by winning in the face of overwhelming odds. Everyone dreams of being some kind of hero or heroine. So, they challenge the odds. Sometimes foolishly, sometimes armed with as much knowledge and ammunition against their opponents as possible to compensate for the odds against them. It's the universal dream, *to win the prize!*

With slot machine playing as with any other gamble, the soundest advice to give any player is, "PLAY SMART!" Reducing the odds against you, increasing your chances of winning, minimizing your losses—it's the same thing here. You have no control over the odds programmed into a given machine or the amount of payout posted in a given pay table on the machine. But you can at least look for the best pay tables with certain types of machines that we'll learn about later.

You don't have to spend years "working" the slots to learn to play smart. But you would be surprised how many players have spent years and thousands of dollars without

learning some basic disciplines—rules that may not always help you win but may help you win the most you can when you are “lucky” enough to hit the big one. What we are talking about here is using plain, common sense. A trait that’s in short supply among most slot players. Of course, you will never completely eliminate the element of “chance” or “luck.” But you can at least minimize your exposure and try the “hit and run” approach that we’ll talk about later. We want you to learn how to “quit winners.”

An important step is to learn as much as you can about the game you intend to play and about your opponent. Yes, your opponent. With slot playing, your opponent is not the casino, not the shift boss, not even the slot manager. It’s the SLOT MACHINE. Once you learn what makes that machine tick, or click, or better yet, clink with coins in the tray, you can learn to play more effectively.

Some basic rules or strategies to follow are described in detail in other chapters. But let us briefly outline what you should learn to become an informed and cautious slot machine player. And let’s emphasize “player.” Always consider yourself a game player, out for entertainment, and you’re less likely to become a “victim” or “addict.”

Playing the Odds

The main reason to study the odds and percentages of slot machines is so you can stop worrying about them. Unless you intend to become a professional gambler, a sports handicapper, a casino owner, or an author on mathematical probabilities, an in-depth study of odds

won’t help you much in playing slots, and it can ruin your fun.

Remember that the odds are always in favor of the casino. If not, there wouldn’t be so many machines and they wouldn’t be constantly expanding throughout the casinos. *Every slot machine you find is built to take most or all of your money if you let it.*

Some casinos may advertise that they have the loosest slots or that they return up to 97.5% or 98%. One Las Vegas casino boasts up to 101% returned. Don’t be fooled. The casinos are not settling for a take of 2 or 2.5 percent and they’re not guaranteeing you a penny’s worth of profit for every dollar you play.

The slot machines in every casino will be programmed with a variety of percentages and you’ll never know what the percentage of return is except in rare places where a few machines actually have a percentage posted.

In Nevada, even the state regulatory agencies have not decreed that machines have a minimum percentage of return. Consequently, depending on the owner’s preference, his business sense, the amount of competition, and his sense of fairness to his customers, machines may be programmed with percentages anywhere between 50 and 99.5 (101?) percent. However, *most of them we believe are in the 85 to 97 percent range.*

On the other hand in Atlantic City, the regulatory agencies ruled that 83% is the minimum allowable. People are standing in line at the casinos to play a machine. With that kind of action, you can probably draw your own conclusions on what the percentages are for most of the machines there. Suffice to say that the casinos don’t really need to be generous. There are cheaper ways to attract players to

the casinos and we have described some of them in the section on special promotions.

Plus, you'll enjoy the chapter on *Machines and How They Work*. You'll learn:

1. How to tell the difference between the mechanicals, electro-mechanicals and the microprocessor controlled types.
2. How to determine what you can win before you put in your coins by carefully reading the award glass or the payout table on the video screen.
3. How to determine how many coins you must play to win the highest jackpot if that is your goal.
4. The difference between single pay lines and multiple pay lines types as well as option payout machines.
5. The differences between straight payouts and progressive jackpots and the resulting reduction in "small wins."
6. Decide between straight slot machines or the games that require some thought or skill. You may want to try both at first to see which you prefer for extended play.

Decide Where To Play

If you live in Nevada, you probably already know that there is no other place with as wide a variety of casinos or other places with slot machines. If you live in the East, the nearest spot is Atlantic City. If you live anywhere else, the chapter on *Where to Play* will give you an overview of the choices for atmosphere and types of machines and jackpots by location. It will also list other attractions if gambling is not the sole purpose for your trip.

If slots are your target, the chapter will steer you to what

we hope is the most likely spot to win the most for your money.

Don't Be Pre-Deceived

Forget most of what you've heard from other occasional players who have either "won big" or "lost their shirts." They may think they're experts either way.

Don't be discouraged by the losers who will swear that all the casinos are crooked and all the machines are rigged to cheat you. The sections on regulatory controls should reassure you somewhat of the safeguards to protect players. The chapter on cheating should put that facet in proper perspective. Likewise, the chapters on *Misconceptions* and *Superstitions*, we hope, will dispel the many myths that have been circulated on ineffective systems and ways of manipulating or controlling the machines.

Play with Self-Discipline

Maintaining self-control is difficult but most important as we mention time and time again in this book. A steady diet of slot playing has broken down the will power of some people we know who quit smoking cold turkey, lost weight on strict diets or showed remarkable persistence in accomplishing other goals.

A few ways to maintain self-discipline should be read and even memorized to serve as ready reminders. Program your mind, your conscience or your sensibility to recall them each time you plan to play for an hour or more.

1. Don't be so anxious to play that you grab the first machine open, even if you recognize it as one you won on

before or saw someone else hit. Take your time and look for the machine you can easily understand, has the right coin value for your budget, and that you feel comfortable with.

2. If a machine you are playing isn't paying, leave it before you put too much into it. Common sense? You would be surprised how many players act as if they are "chained" to a cold machine!

3. Don't take money into a casino that you can't afford to lose. Read the chapter on *Money Management* and make it work for you.

4. Always play with a positive attitude. If you're grumpy, you'll probably get angry. If you're having bad luck, go home and watch TV or read a good book. If you want to stay in the casino in spite of your luck, just watch other people play. It's great therapy and it won't cost you a penny!

5. Don't drink while playing. Booze impairs your judgment and weakens your will-power.

6. Play your hunch if you really have one. We don't know why, but intuition can sometimes be your best guide. If you tell yourself it's time to stop playing or to change machines, it usually is.

7 thru 70. Quit when you're ahead.

Some good indicators that you are losing control are:

1. Your positive attitude is turning to a negative one.
2. You start to feel "guilty" about the amount of money you've lost.
3. You get desperate to win, to recoup your losses.
4. You have played back all the coins the machine dropped and think it's going to start paying you again.
5. You start lying to yourself such as, "I'd spend more

than this buying new clothes I don't need and it isn't nearly as much fun."

6. You laugh and joke with fellow players about how much money you've lost as if it didn't matter.

7. You can't quit when you're ahead.

Look for these signs and learn to respond to them.

Be Selective

Decide which machines are most appropriate to your interests, your bankroll, and your expectations. There's something for everyone in the slot arena from penny slots for long-lasting fun at a minor investment, to \$100 slots for a high-roller thrill at a substantial risk, and all the stages in between.

Look for the machines that fit your style and have fun, but don't be tempted to disaster when you see someone else win on a machine that is beyond your means.

If you typically go home a loser like most everyone else, then this book is for you. Maybe it can help. Maybe not. But one thing is for sure. You can't take your favorite slot machine home with you and play it, but you *can* take what we hope becomes your favorite book home with you and read it, and read it again.

Maybe, just maybe, you'll realize that simply playing the machines, and having the opportunity to win, is the real fun. We're betting that's the reason why right now you can't wait to tie down your favorite machine and sit a spell. If you realize that, then you're not a loser. No sir! You're the biggest winner of them all!

May you have the time of your life!

CHAPTER 1

Machines and How They Work

You don't really want to know how to build a slot machine so rest assured this chapter won't detail mechanics of their innards. We have described the main features of the older mechanical and electro-mechanical units under the brief history of manufacturers in a later chapter. Since their use is now practically history, we'll concentrate on their successors, the microprocessor machines. We'll learn how they operate and how they are programmed to expand the odds, making possible the super jackpots while generating big revenue for the casinos.

Mechanical Machines

These machines earned the nickname, "one armed bandits." Their "arms" or handles were such an integral part of the play that the new microprocessor machines still have handles to pull although the handle has absolutely no function except to activate the machine, which could also be done by pushing a button. Some slots actually have both buttons and handles.

Actual spinning reels was the other feature that fascinated players. Recent machines with 13" video screens displaying the simulation of spinning reels did not impress many slot players. In fact, most players were cynical of their design. Consequently, manufacturers are again making machines with real "reels" but which are controlled by stepper motors, that are in turn controlled by the microprocessor program.

The highest jackpots of true mechanical machines rarely exceeded \$25 and the automatic payout was small. Large wins were paid by an attendant.

So don't be fooled on your first visit to a casino. Old mechanicals have a different "feel" to the handle although manufacturers have tried to simulate it with the new handles. The sound of gears meshing and the clicks of metal as the reels "stop" or bounce are noticeable on mechanicals. The sound is definitely different from the "built-in" noise of chirps, whirrs, and music in the micros.

Electro-Mechanical Machines

The electro-mechanical slots began replacing the

mechanicals in the late 50's, 60's and early 70's. Now they are rapidly disappearing from the scene to make way for the microprocessor controlled units.

This group of slots included refinements such as multiple coin play, multiple pay lines, "buy-a-pay" features, progressive jackpots and more anti-cheating safeguards. Despite these safeguards there are approximately 120 different ways to cheat an old electro-mechanical machine, especially if it is not adjusted properly.

Electrically powered enhancements were coin meters, flashing lights, noise makers and hoppers that held more coins than the old coin tubes and could pay out larger amounts automatically. However, verifying, paying, and tracking large jackpots was still done manually. If a machine paid out frequent small wins and had to have its hopper refilled more than two or three times in a short period, the casino would shut it down to check for a possible malfunction or presence of cheating devices. Players with a "hot" machine got pretty "hot under the collar" when their machine was shut down.

Many of the old electro-mechanicals still in use may look the same but most have been converted into microprocessor units. **So don't assume "easy" odds by the way a machine looks. It might look "old" on the outside but have the most modern computer design on the inside!** Summit Coin was one of the first manufacturers to produce a kit used to convert these machines. Converting them was more economical than purchasing the micros.

Electronic Machines

Electronic machines were transitional units and short-

lived. They used solid state technology at a time when casinos and the public were still skeptical of rapidly developing electronic devices. Only the most forward-looking casinos would install a few of them.

In 1974, Gamex Industries—where this author began his association with gaming—developed one of the first totally electronic slot machines. A number of them were installed at Caesars Palace and received more play than the traditional machines. They also added much color and light to the normally dim and subdued atmosphere of Caesars.

But the solid state technology was rapidly replaced by the more reliable microprocessors, so electronic machines virtually disappeared. Manufacturers began to compete with each other to develop the best microprocessor-controlled slot.

Microprocessor-Controlled Machines

Microprocessors, often called “chips,” are miniature computers which work in conjunction with other “chips” or integrated circuits (IC’s) to control all parts of the machine, from the lights behind the award and logo glasses, to the coin meters, the automatic hopper, video screen and symbols displayed, and even the “reels” in the newest look of slots that simulate the old mechanicals. One or a series of these chips hold the programmed memory that performs all the intricate functions as well as generate the win-loss symbols important to the player.

It is impossible to systematically play a microprocessor-controlled machine, provided it is properly programmed. And it is almost impossible to cheat one unless the memory chip is substituted.

The program is one thing that the gaming control board checks very carefully. They check the algorithms and the method used to calculate or select the random numbers, examining it mathematically, theoretically, and empirically, to make sure the machine performs as it is supposed to and will not cheat the player. Put simply, an algorithm is a formula or sequence of instructions for a task. In the slot machine program, it is a mathematical formula that determines how the number or set of numbers is to be selected and translated into a specific combination and arrangement of symbols to be displayed on the video screen or on the reels.

An important part of the program is the random number generator (RNG). Have you ever heard of a perpetual motion machine? Have you ever watched bees storing honey in a beehive? The frenzied activity never stops until the bees are dead.

Likewise, the microprocessor containing the program and the RNG never stops unless the power is cut off. Every millisecond the RNG selects a random number from a sequence within a given range. Most machines use a 32 bit RNG, which means it will generate a value somewhere between 0 and 4,294,967,296 (exponentially 2 to the 32nd). We will round off the number to 4 billion for discussion purposes. Theoretically, it should select each number in that range at least once before repeating a number, but that is not necessarily true. Within that range of numbers, a specific number or combination of three, four or more numbers is translated into a specific set of symbols. The microprocessor looks somewhat like a fat centipede which ostensibly sits there tapping its little feet until someone inserts a coin to play the machine. But that little “critter” is never quiet. While tapping its feet, it is executing millions

of programmed instructions included in its “memory” such as checking paytables or making sure no one is tampering with the hopper, the reels, the door, or other parts of the machine. It checks and meters coins in, coins paid, and coins to the drop box and stores that information in the memory. Meanwhile it’s waiting for a player.

Player Instigated Action

All modern (computerized) machines operate on what is called “Player Instigated Action.” (We have included the acronym “PIA” for brevity in this explanation. It is not a common one heard in gaming jargon.) PIA may occur at various times, depending on how the machine is programmed. It may differ with the machine and the manufacturer. PIA could occur at the moment the coin is inserted, accepted and/or registered on the meter, at the instant the player pulls the handle or pushes the button for “deal,” or some specific millisecond after the player does one of these things. It’s all in the program.

When PIA occurs, it’s like a “stage cue” or a “curtain call” to the centipede to go into his “fancy dance” of selecting the symbols for the machine to play. It accesses the RNG to tap the treasure stored in that beehive, either honey (winning symbols) or beeswax (losing symbols). When PIA occurs, the mathematical formula in the program tells the RNG to select a number or group of numbers which will correspond to a specific set of symbols. Sometimes the RNG is accessed several times for the combination of symbols on a single play.

If you “knew” at a given millisecond what set of symbols the RNG would display, you still could not

systematically play the machine to display those symbols. Several factors prevent systematic play to “call out” a given set of symbols. First of all, it is literally impossible to know at a given millisecond what symbols the RNG will choose, since the choice is “random,” meaning that there is no predetermined sequence of choices. Second, even if you knew the exact millisecond that the winning symbols are supposed to appear, the human reaction time is too slow to play the machine fast enough to freeze that set of symbols. For instance, the average person has a 50 to 350 millisecond reaction time, and mechanical and electrical delays in the machine can vary from 16 to 50 milliseconds between plays. Consequently, there are from 66 to 400 different combinations that can occur during that time over which you have no control.

So much for worrying about another player winning “your” jackpot by playing “your” machine. Now, you can see that if someone else wins a jackpot on the next pull of the machine you had been playing, the RNG determined the timing of the jackpot, not the fact that the jackpot came on the next pull. Even if you had continued playing the machine, you most likely would not have won the jackpot. It’s all a question of RNG timing in milliseconds, not the sequence of handle pulls. Surprised?

Basic Machine Configurations

The three basic configurations of slot machines are Multipliers, Multiple Line and Buy-Your-Pay. They are all multiple coin machines. Multiple coin machines are the only type currently manufactured. Single coin, single line machines are obsolete. Although you may find some of

these old machines around, they will soon join the antiques. They no longer carry their weight on the casino floor. The MGM Grand in Las Vegas (now Bally's) was the first casino to open with 100% multiple coin machines. The casino experts all said they were crazy. Kirk Kerkorian (the owner) laughed all the way to the bank.

"Multipliers" are those machines that allow you to increase your winnings proportionately by playing multiple coins. Some have an additional incentive jackpot award for playing the maximum coins. Most common multipliers are 2, 3, 4, and 5-coin types although some are found which require 8, 9, and even 10 coins for the incentive award. Generally, multipliers have single pay lines.

CAUTION: ALWAYS MAKE SURE THAT THE APPROPRIATE SECTIONS OF THE PAYOUT TABLE ARE LIT BEFORE YOU PULL THE HANDLE. IF THEY'RE NOT, YOU LOSE, EVEN IF YOU ACTUALLY PLAYED THE RIGHT NUMBER OF COINS.

"Multiple line" machines pay small wins and jackpots on more than a single line. Most common are 3-line or 5-line criss-cross types. But in a few you will find as many as 8 lines. Multiple line machines require a coin to be played for every payout line. A space beside each line and also on the award glass of the machine should light up when you insert the appropriate coins to indicate that it is being played and will pay if hit. Most machines have the largest jackpot paid on the highest numbered line. If you don't insert enough coins to light up that line, you won't win the jackpot if it hits.

CAUTION: ALWAYS MAKE SURE THAT THE LINES ARE LIT BEFORE YOU PULL THE HANDLE. IF THEY'RE NOT, YOU LOSE, EVEN IF YOU

ACTUALLY PLAYED THE RIGHT NUMBER OF COINS.

"Buy-Your-Pay" machines have a single payout line. They not only require the maximum coins to be played to win the top jackpot, they require a specific number of coins to be inserted to win the smaller payouts. For instance, a 3-coin machine will pay cherries only on the first coin. To win on oranges, or plums you must insert the second coin. For the jackpot on Bars or 7's you have to insert the third coin. There are 2, 3 or 4-coin types with varying types of symbols scattered among the other multipliers and multiple line types.

Watch out for these machines. They've caused unwary players to miss the big win more than any other type. They ought to be called "Buy-Your-Loss" or "Lose Your Pay" machines.

REMEMBER — ALWAYS PLAY THE MAXIMUM NUMBER OF COINS ON THESE MONSTERS. IF YOU DON'T, YOU MIGHT JUST AS WELL HAND THE CASINO YOUR CASH WHEN YOU WALK IN AND SAVE YOURSELF THE TIME AND EFFORT OF PULLING THE HANDLES.

Megabucks

As the name suggests, this super slot by IGT is the *piece de resistance* for slot players.

At 12:24 p.m. on February 1, 1987, Terry Williams of Los Gatos, California hit the first MegaBuck jackpot for \$4,988,842.14, at Harrah's Reno. He had only invested \$47.00. That's a return of over \$106,528 for every dollar! Williams, a 44 year old marriage counselor by day and an

electronics technician by night, had intended to go skiing, but a pulled muscle in his back kept him off the slopes. He had played a quarter progressive with a \$180,000 jackpot and had stopped to go for a walk. On his return, he stopped at the MEGABUCKS machine and had played for less than 90 minutes before lining up the four sevens. He said that his tray kept filling up with minor payouts so he kept playing. His trip from the San Francisco Bay area to Reno was the first in three years.

The jackpot will be paid in ten annual installments of \$499,000 each. Of course, Terry must give Uncle Sam his share for income taxes, but he shouldn't need to continue working day and night. He should now have time to ski and play to his heart's content.

Prior to Williams' win, the largest slot machine jackpot ever hit was for \$3 million at Harrah's Tahoe in June 1986 which was at that time the record jackpot for one casino.

Terry Williams visited Reno again to celebrate the anniversary of his Megabucks win and to try to repeat his luck, but the fates had decreed otherwise.

Just as we were finishing this manuscript, MEGABUCKS was hit again for the largest slot jackpot ever. Cammie J. Brewer, 61, of Reno, Nevada went to the Cal Neva Club for their 99-cent breakfast. He eats breakfast there every Sunday with his 81 year-old father-in-law. After playing about \$20, Brewer lined up the four sevens for a \$6,814,823 jackpot. Wonder if this got him out of the dog house with his wife, since it was Valentine's Day and he had forgotten to get her a present for the first time in 26 years? His largest previous win after 25 years of playing slots was \$650.

After Brewer's win, the State Gaming Control Board

inspected the computer chips and the film of the event to make sure it was a legitimate jackpot.

The Megabucks jackpot reached the \$6.8 million plus mark approximately one year after it was first hit for \$4.9 million. It automatically reset at \$1.9 million and is progressing rapidly in the 52 casinos throughout the state. It could hit again at anytime.

MEGABUCKS was introduced on March 6, 1986 with banks of progressive dollar machines in nine casinos, and now totals over 52 installations. The jackpot started at \$1 million and grew to almost \$5 million in less than one year before it was hit for the first time. An average of \$2.25 million weekly is played through the system with the jackpot climbing at the rate of \$65,000 to \$110,000 each week.

The first MEGABUCKS machines were all micro-processor controlled, 4-reel video machines with a 3-coin, 3-line payout configuration. Lining up four sevens on the first line with \$1 played paid \$5,000. Four sevens on the second line with \$2 bet paid \$10,000. The \$3 bet covered all three lines and the progressive jackpot was for the four sevens on the third line. The progressive jackpot never drops below \$1 million. After it was hit by Williams, the secondary meter automatically reset it at \$1.9 million.

MEGABUCKS was first introduced to rival the vast popularity of lotteries in California and other states. In fact, several states including Massachusetts and Oregon have lotteries referred to as "megabucks." Consequently, *the promotional advertising of a statewide slot progressive caused many people to think it was sponsored by the state of Nevada. However, it is entirely owned and operated by the manufacturer, International Game Technology. IGT produces, installs, and maintains the system,*

including the machines, display meters, computers, and telephone lines. Further, it handles all administration, advertising and liability for the jackpot payout. All the casinos have to do is rake in their percentage. In essence, MEGABUCKS is handled like IGT's other "slot" routes but with a great deal more promotion.

At an International Gaming Conference recently, IGT unveiled its new MEGABUCKS machine. This new reel machine has replaced all the video machines. Although the controls are still microprocessors, the machine actually has mechanical spinning reels. Further innovations were the addition of the "MULTI-MINI" jackpot programmed to pay several thousand dollars approximately every two or three days somewhere in the state, depending on the frequency of play. The percentage of the amount played is divided between the major jackpot, the secondary (invisible) meter for reset when the major jackpot is hit, and the MULTI-MINI jackpot.

Within eight days after the reconfiguration to the reel machines, the MULTI-MINI jackpot had been hit about six times. Theoretically, the large jackpot should hit every four or five months and range from \$2 to \$3 million. On a busy Saturday night the big jackpot increases a dollar about every three seconds. In one recent month's time, Megabucks had paid over \$800,000 to 141 players in Mini-jackpots.

As of this writing, the major casinos that have banks of MEGABUCKS machines are:

LAS VEGAS
California
Fremont
Lady Luck

Del Webb's Mint
Fitz
El Cortez
The Golden Gate
Sam's Town
Barbary Coast
Bourbon Street
Stardust
Vegas World
Marina
Tropicana, The Island
Paddlewheel
Landmark

RENO/SPARKS

Harrah's Reno
Comstock Hotel-Casino
Karl's Silver Club
Club Cal-Neva
Fitzgerald's
Boomtown
Eldorado Hotel/Casino
Eddie's Fabulous Fifties
Old Reno Casino
The Sands Regency

OTHERS

Red Lion Inn & Casino, Elko
Red Garter, Wendover
Fallon Nugget, Fallon
Fallon Bonanza, Fallon
Cactus Pete's, Jackpot
Carson Valley Inn, Minden

Gold Strike Inn, Jean
Whiskey Pete's, Jean
Casino West, Yerington
Parker's Model T Casino, Winnemucca
Winner's Inn Hotel/Casino, Winnemucca

STATELINE (South Lake Tahoe)

Harrah's Lake Tahoe
Harvey's Resort
Del Webb's High Sierra
John's Tahoe Nugget
Bill's Lake Tahoe Casino
Lakeside Inn & Casino

CRYSTAL BAY (North Lake Tahoe)

Cal Neva Lodge
Tahoe Biltmore

LAUGHLIN

Sam's Town Gold River
Del Webb's Nevada Club
Don Laughlin's Riverside Resort

CARSON CITY

Cactus Jack's Senator Club
Carson City Nugget
Mother Lode
Ormsby House

One of the main reasons that IGT developed Megabucks was to give the smaller casinos an opportunity to offer their patrons a multi-million dollar jackpot with no risk.

Besides the \$5 million jackpot hit by Williams, in

approximately one year after its introduction, Megabucks paid out \$110 million in smaller wins.

IGT has obtained approval for a MEGABUCKS system for Atlantic City and is installing a modified version on the island of Macao.

Other High Roller Slots

Recently, Caesars Palace installed three machines that accept only \$100 tokens. The top payoff of \$100,000 requires a bet of two coins. Ron Dowell of California was one of the first to play the machine. "It feels just like playing a nickel machine," he said. That's a pretty big nickel! He won \$500 and kept playing until he lost it.

The machines are manufactured by Universal Distributing of Nevada, and accept only coins specially minted with 10-carat gold centers and silver borders. Mike Moore, casino manager of Caesars, stated that they installed the machines because of popular demand. Do we need any more proof that slot machines are no longer considered the "poor boy's" game?

The Golden Nugget also has a bank of \$5.00 slots with a top jackpot of \$5 million dollars when you line up four "Golden Nuggets" on the center line of a 3-line, 3-coin machine. That's \$15.00 per handle pull when you play. Yes, we are really into the era of slot "high rollers," or maybe we should call them "high reelers."

All-Win Progressives

This type of progressive includes a bank of machines and a display of two jackpots, one large and one smaller,

each increasing with play until they reach a predetermined limit if not hit before. It also displays the number of machines in the bank (i.e. 1 thru 16.) Each number lights up when it is being played and stays lit (eligible) for a predetermined amount of time. If a player hits the winning combination, he wins the big one. All other players whose numbers are lit, share the smaller jackpot. When you play an ALL WIN machine, make sure your play is fast enough to keep your number lit at all times. This is extremely important if you play more than one machine. IGT is marketing this concept overseas but is not promoting it very much here in the States. We saw one of these in operation at the El Cortez with a bank of about 16 Keno machines. The top jackpot is \$150,000. The smaller shared jackpot is \$50,000. The ALL WIN progressive feature is used with all types of machines.

Big Berthas

These huge machines are primarily attractions placed near the casino's front door to lure players inside. They are generally the same as other machines, just bigger and slower. Typically their payouts are not comparable to their bulk.

The Four Queens in downtown Las Vegas boasts the largest slot machine in the world called "The Queen's Machine" which pays a "Queen's Ransom." It contains eight reels and pays on three lines. One, two or three dollars may be played, buying one, two or three pay lines. This machine is designed for multiple players. One to six players sit in "thrones," made of red velvet high back wing chairs. In front of each, a table console includes a coin slot,

video winnings display and winner's tray. A "Queen" (change girl) wearing red velvet and golden gown and a gold and jewel encrusted crown pulls the handle of the giant machine after all players have inserted their coins. The standard payout is for cherries, plums, oranges, watermelons, bars and queens. The giant jackpot is a \$300,000 aggregate payout for eight queens on the third line. If two cherries show on any of the three lines on either the left or right sides, each player wins five dollars. However, the word "aggregate" is a bummer. If six people are playing when the eight queens line up on the jackpot line, the \$300,000 is split six ways. If only one man is playing, he gets the whole pot.

NOTE: ALWAYS WATCH FOR GIANT JACKPOTS WHICH ARE ADVERTISED WITH "AGGREGATE" LIMITS. YOU MAY HAVE TO SPLIT WITH ONE OR MORE PLAYERS WHO HIT AT THE SAME TIME YOU DO.

Another disadvantage to this biggest of the Berthas is that it is so slow. We watched the machine for an hour and it takes approximately 22 seconds for all eight reels to stop after the handle pull. On a 3-reel machine, a spin normally takes approximately six seconds. On a 4-reeler approximately seven seconds. During that hour it hit three oranges twice and three plums once at a payout of \$10 each. It hit two cherries once for \$5 and a single cherry about eight times for \$2 each. The only other hit was five bars for \$200. No watermelons hit, nor did the queens, the symbol with the largest payout. Frankly, we find this machine boring. Also, the odds on hitting the big jackpot with 8 reels and 22 symbols per reel could be as high as 1 in 54,875,873,540 or one in almost 55 billion! We calculated the odds with only one queen per reel. The odds would be less if there

are more than one queen per reel. Compared to the other dollar progressives with larger jackpots, it definitely does not offer the best opportunity to get rich. Slot players are paying a big “ransom” for these queens!

Nine-Line Giant

This variation of a video slot is really three 3-reel machines in one with three pay lines. Its attraction is that if there is no win on each play the coins bet are returned. It takes nine coins per handle pull. However, it plays left to right and right to left, with the traditional fruit symbols. So if you get a single cherry on only one line, you get two coins for nine. You seldom get your nine coins back. Also, it requires three cherries or three oranges in a row to get ten coins back. If you get nine cherries on the third payline, you win 1 million coins. For a quarter machine, that's \$250,000. Payout for eight cherries is 25,000 coins and for seven cherries 2,500 coins.

A variation of the nine-line giant is the Totem Pole, which is a stack of three or more machines, requiring the multiple coins, but played with one handle pull. You may win on one, two, or even all of the machines each with its own individual payable. This should be popular with players who like to play more than one or two machines, but we don't see much action on them. There are usually only one or two found in each casino.

CHAPTER 2

Percentages

All gaming machines, (slots, poker, keno, etc.) have been designed to pay back to the player a percentage of what is played. The amount varies with different types of machines and with different manufacturers. However, one thing is common among all machines, the payback percentage varies over time and will eventually approach the theoretical percentage.

If, for example, a particular machine is set to hold 4% from the player, that certainly doesn't mean that the player can expect to lose 4% of all the coins played over the first few hours, or even the first few days. For that short of time, virtually anything is possible...losing at

a much greater rate, winning a little, winning a lot, or just breaking even.

The percentages for slot machines, and all other casino games for that matter, are based on long-term trials . . . tens of thousands, even hundreds of thousands of handle pulls, blackjack hands, or rolls of the dice. To really understand percentages, it's important that the player first understands the difference between short-term and long-term exposure. In the short term, percentages of 1%, 2% or even 3% against the player have little significance. But over the long term, those percentages become very significant and will tell you exactly what you can expect.

Slot players can boast of many short-term wins over the course of their life. In fact, it's always the short-term successes that most players remember. But unfortunately, those short-term sessions add up to long-term exposure. Few players win, then quit forever. That doesn't sound like much fun.

If you learn anything from this chapter, learn to limit your exposure . . . to "hit and run" as the seasoned players call it. No one has to tell you how easy it is to give all your winnings back.

Easy Calculations

The calculation of the payback percentage of a slot machine is a relatively straightforward procedure. It only gets complicated when you have a large number of winning combinations or a large number of reels. Originally, slot machines had 20 positions or stops on each reel. This means that on a three reel slot there are $20 \times 20 \times 20 = 8,000$

different combinations of positions that the reels can stop on. That is called the "cycle."

In theory, if you play the machine 8,000 times, you should see every combination once. However, in reality you will see some combinations several times and some you might never see. If you played it 80,000 or 800,000 times you would probably see every combination. The longer you play the machine the closer the average results will be to the theoretical results.

What does this mean to you? Well, if there is one 7 on each reel, you would have $1 \times 1 \times 1 = 1$ way of hitting three 7's in the 8,000 possible combinations. If there were four cherries on each reel, you would have $4 \times 4 \times 4 = 64$ ways of hitting three cherries. Since there are more ways of hitting cherries than 7's, the cherries pay less than the 7's. The casinos and the manufacturers design these combinations of symbols called "reel strips" in order to ensure a desired payback.

The following drawings of symbols will help the reader understand the chart on page 33. The symbols are called "7-BAR," "5-BAR," and "1-BAR."



Since machines using these symbols typically have blank spaces also, many players refer to them as “ghost” machines. The term “ANY BAR” (AB) refers to any combination of bars on the payline, or in other words . . . no blanks.

Figure 1 is an actual reel strip calculation done by a manufacturer for one of its machines. the machine is a 2-coin, 3-reel machine with blanks and 1-BARS, 5-BARS and 7-BARS for symbols.

Section A shows how many of each symbol is on each reel. Section B indicates the payback percentage and the hit frequency. The hit frequency is the percentage of winning combinations to the cycle, i.e. $8,320/32,768 = 25.39\%$. That means that on average you will get a winner 25 out of every 100 times you play.

The second coin percentage is higher because of the bonus awards shown in section C. This is because three 5-BARS pays 50 coins if you play one coin and 150 coins if you play two coins. Three 7-BARS pays 200 coins on the first coin and 1000 coins on the second, as opposed to the normal doubling of the payout on the second coin. **PLAYING THE MAXIMUM NUMBER OF COINS ON SLOT MACHINES ALMOST ALWAYS GETS THE BEST PAYBACK.**

Section D shows the winning combinations and the calculations. Notice the 811 deductions listed on the ANY BAR (AB) pay line. This is a mathematical requirement as the 811 hits for the 1-BARS, 5-BARS and 7-BARS which pay more than the five coins for any three ANY BARS must be subtracted from the total ANY BAR hits. Finally, section E shows what percentage of the total payout each combination represents. As you can see, over 40% of the payouts are 5-coin ANY BAR pays.

figure 1

MODEL: 3-REEL 2-COIN ANY BAR WITH PAY ON BLANKS 32 STOP CYCLE = 32768					figure 1	
A					E	
SYMBOL	REEL 1	REEL 2	REEL 3		B	
1B	16	18	18		C	
5B	9	9	9			
7B	5	4	4		D	
	2	1	1			
COIN 1 PERCENT 86.97 HIT FREQ 25.39 COINS 28,499 HITS 8,320					BONUS AWARDS	
COIN 2 PERCENT 94.91 HIT FREQ 25.39 COINS 62,198 HITS 8,320					150	1000
					E	
					TOTALS	
COMBINATION			HITS	DEDUCT	PAYS	COIN1 COIN2
AB	16	18	5,184	0	1	5,184 10,368
AB	AB	14	3,136	811	5	11,625 23,250
1B	1B	9	729	0	10	7,290 14,580
5B	5B	4	80	0	50	4,000 12,000
7B	7B	1	2	0	200	400 2,000
					PAYOUT %	
					18.2	
					40.8	
					25.6	
					14.0	
					1.4	
					28,499 62,198	

"AB" MEANS "ANY BAR"

"AB" MEANS "ANY BAR"

For progressive machines, there is no bonus on the maximum coin; you win the progressive jackpot instead. Our example of an 86.97% machine with a 5% progressive would result in a 91.97% machine overall. If this were a dollar machine, the progressive meter would start at \$400 and would go up five cents for every dollar inserted. When you hit the big jackpot you get whatever is on the meter. The casino has been collecting 13.03% (86.97% payback) from the machine, and when it finally hits, they pay the amount on the meter and the overall casino percentage drops to 8.03% (91.97% payback). In the short term it might look like the machine paid too much, but in the long run the casino will make its percentage.

When mechanical and electro-mechanical machines were around, you could watch the reels spin and count the symbols in order to determine the percentage. Today, with most machines using microprocessors, there is no way of telling the percentage from the outside. In fact, unless you are the manufacturer, it would take thousands of dollars invested in "reverse engineering" to determine a machine's actual percentage. The machines use the reels as displays only, and in most cases they have nothing to do with how many times or in how many combinations the symbols will appear on the payline. When you consider that some of the machines can have as many as 256 computer-determined "stops" per reel, the odds of hitting the big jackpot could be *1 in 4 billion or more!*

With the old mechanical machines, each symbol on the reel represented a "stop," and there were generally 20 such stop positions as we've mentioned. So, to the average slot player facing a machine that looks like a good ol'

mechanical but with a jackpot that looks too good to be true... it is!

The computer inside the slot machine has programmed those apparent 20 stops per reel to look like as many as 256! A clever deceit? Not really. Since the video-screen slot machines (you know, the ones with the "picture" of spinning reels) didn't go over so hot with the players, yet were the only way to offer really big jackpots, the casinos and manufacturers decided to restore the mechanical reel feature, but leave the computer inside! That's the micro-processor controlled mechanical. And that's what you see time and time again in the casino, especially where big jackpots are offered.

Don't think 20 x 20 x 20 for all the combinations... think 256 x 256 x 256 and get out your calculator.

When you use these extremely large numbers of stops on a machine, the large jackpot can become an insignificant part of the overall percentage, even if it is a million dollars or more. We joked with one casino owner about a possible 4 billion to 1 chance on hitting his giant machine if we put one 7 on each reel, and he said, "We'll give away the hotel and let the winner worry about the \$ 5 million we're in debt."

I remarked, "It will probably hit the first day."

The owner countered, "If it does I'll be in Jamaica or the Bahamas, anywhere but here."

Figure 2 is an example of a more complicated reel strip. I'll leave this one to you to analyze if you are so inclined. Everyone enjoys a challenge.

figure 2

MODEL: 4-REEL 3-LINE TRIPLE BAR
25 STOP CYCLE = 390624

SYMBOL	REEL1	REEL2	REEL3	REEL4
CHerry	1	10	10	1
ORange	10	2	2	10
PLum	2	6	6	2
BEll	6	3	3	6
1Bar	3	1	2	3
2Bar	2	1	1	2
3Bar	1	2	1	1

COIN 1 PERCENT 92.058 HIT FREQ 10.689

COINS 359601 HITS 41756

COIN 5 PERCENT 92.740 HIT FREQ 32.069

COINS 1086806 HITS 125268

R1	R2	R3	R4	R1	R2	R3	R4	HITS	DEDUCT	PAYS	TOTALS
CH	CH	CH	CH	CH	CH	CH	CH	9000	262	2	17476
CH	CH	CH	CH	CH	CH	CH	CH	9000	262	2	17476
CH	CH	CH	CH	CH	CH	CH	CH	3750	0	5	18750
CH	CH	CH	CH	CH	CH	CH	CH	3750	0	5	18750
CH	CH	CH	CH	CH	CH	CH	CH	2400	0	10	24000
CH	CH	CH	CH	CH	CH	CH	CH	2400	0	10	24000
CH	CH	CH	CH	CH	CH	CH	CH	100	0	20	2000
CH	CH	CH	CH	CH	CH	CH	CH	600	0	10	6000
CH	CH	CH	CH	CH	CH	CH	CH	600	0	10	6000
CH	CH	CH	CH	CH	CH	CH	CH	400	0	20	8000
CH	CH	CH	CH	CH	CH	CH	CH	400	0	20	8000
CH	CH	CH	CH	CH	CH	CH	CH	1656	0	10	16560
CH	CH	CH	CH	CH	CH	CH	CH	1656	0	10	16560
CH	CH	CH	CH	CH	CH	CH	CH	144	0	20	2880
CH	CH	CH	CH	CH	CH	CH	CH	1026	0	20	20520
CH	CH	CH	CH	CH	CH	CH	CH	1026	0	20	20520
CH	CH	CH	CH	CH	CH	CH	CH	324	0	40	12960
CH	CH	CH	CH	CH	CH	CH	CH	132	0	60	7920
CH	CH	CH	CH	CH	CH	CH	CH	132	0	60	7920
CH	CH	CH	CH	CH	CH	CH	CH	18	0	250	4500
CH	CH	CH	CH	CH	CH	CH	CH	46	0	100	4600
CH	CH	CH	CH	CH	CH	CH	CH	46	0	100	4600
CH	CH	CH	CH	CH	CH	CH	CH	4	0	250	1000
CH	CH	CH	CH	CH	CH	CH	CH	48	0	200	9600
CH	CH	CH	CH	CH	CH	CH	CH	48	0	200	9600
CH	CH	CH	CH	CH	CH	CH	CH	576	96	20	9600
CH	CH	CH	CH	CH	CH	CH	CH	1824	190	20	32680
CH	CH	CH	CH	CH	CH	CH	CH	2400	0	10	24000
CH	CH	CH	CH	CH	CH	CH	CH	225	0	2	450
CH	CH	CH	CH	CH	CH	CH	CH	2	0	1000	2000

38 Slot Machine Mania

Figure 3 is an example of a 4-coin "Buy-Your-Pay" machine. This machine is one of the most frustrating ones in a casino. Each coin you enter enables or "buys" your payouts. So if you play one coin, only the cherries will pay. If you happen to line up the three BARs or the three \$1,000 symbols and only have one or two coins in the machine, you won't get a thing.

I have seen many machines with three BARs lined up and only one coin had been played. No matter how much the player argues with the casino ("I know I put four coins in there!") he doesn't get paid.

This is probably the only type of machine where the more coins you play, the lower your percentage of return. If you don't play the maximum coins, however, your chances of missing a big payoff are greater. These machines do have reasonably high hit-frequencies but overall higher percentages, if you "buy" all "pays."

MODEL: 4 COIN BUY YOUR PAY

25 STOPS

CYCLE 15625

figure 3

COIN	%	HIT FREQ. %	SYMBOL	REEL1	REEL2	REEL3
1ST	95.4	33.8	Cherry	7	5	2
2ND	92.2	39.8	ORange	5	4	5
3RD	93.5	40.8	BEll	1	5	6
4TH	92.5	40.9	MELon	5	1	1
			BAR	5	3	10
			\$1000	2	7	1

1ST COIN	R1	R2	R3	HITS	PAYS	TOTAL
CH	7	20	23	3220	2	6440
CH	18	20	2	720	2	1440
CH	7	5	23	805	5	4025
CH	18	5	2	180	5	900
CH	7	20	2	280	5	1400
CH	7	5	2	70	10	700
						14905

Percentages 39

2ND COIN	R1	R2	R3	HITS	PAYS	TOTAL
OR	5	4	5	100	10	1000
OR	5	4	10	200	10	2000
BAR	5	4	6	100	10	1000
OR	5	5	6	150	18	2700
BE	5	5	10	250	18	4500
BE	5	5	6	150	18	2700
BAR	5	5	6	150	18	2700
MEL	1	1	1	1	20	20
				951		13920
				6226		28825

3RD COIN	R1	R2	R3	HITS	PAYS	TOTAL
BAR	5	3	10	150	100	15000
BAR						43825

4TH COIN	R1	R2	R3	HITS	PAYS	TOTAL
1000	2	7	1	14	1000	14000
1000						57825

Poker Machine Percentages

Video poker machines are unlike slots in that you can see exactly what the percentage is for the machine and you can in turn shop around for the best machine to play. Figure 4 shows the most common pay tables and their corresponding payback percentages. All of these percentages have been determined empirically since there is no absolute method for calculating them. I have never seen a complete calculation for the theoretical percentage of a video draw poker machine. Although some pseudo-experts claim to have calculated it, I must revert to my Missouri born attitude of "show me" before I will believe it.

These percentages hold true for all denominations of machines with slight variations we call the "idiot factor." That is the degree of skill the player uses. A player's skill or lack thereof will result in an overall variance of only plus or minus 1%. (Unless we're dealing with actual walking, talking idiots.) Additionally, **the inclusion or exclusion of jacks or better in the pay schedule will result in an approximate 21% difference! Be careful!**

If you happen to find a machine with a slightly different pay table, you can estimate its percentages by whether its pays are a little higher or lower than the ones given in the table.

VIDEO POKER PAY TABLES

	250	250	250	250	250	250	JOKERS WILD	DEUCES WILD
ROYAL FLUSH	—	—	—	—	—	—	400	300
FIVE OF A KIND WITH JOKERS	—	—	—	—	—	—	200	200
FOUR DEUCES	—	—	—	—	—	—	100	—
ROYAL FLUSH WITH JOKERS	—	—	—	—	—	—	—	20
ROYAL FLUSH WITH DEUCES	—	—	—	—	—	—	—	10
FIVE OF A KIND WITH DEUCES	—	—	—	—	—	—	—	8
STRAIGHT FLUSH	50	50	50	50	50	50	50	4
FOUR OF A KIND	25	25	25	25	25	25	15	3
FULL HOUSE	9	8	7	6	9	9	7	2
FLUSH	6	5	5	5	6	6	5	2
STRAIGHT	4	4	4	4	5	5	3	2
THREE OF A KIND	3	3	3	3	3	3	2	1
TWO PAIR	2	2	2	2	1	1	1	—
JACKS OR BETTER	1	1	1	1	0	0	*1	—
PERCENTAGES	96	93	92.5	92	88			

figure 4

* JOKERS WILD MACHINES TYPICALLY PAY ON KINGS OR BETTER AMOUNTS SHOWN ARE FOR 1 COIN PLAY PERCENTAGES REFLECT ALL PAYOUTS INCLUDING THE TYPICAL 4000 COIN INCENTIVE AWARD FOR MAXIMUM COINS PLAYED.

The following chart is an example of how the casino relies on its computer system to keep an accurate record of all the slot machine activity and performance. The chart is generated weekly, monthly, and year-to-date.

TYPICAL CASINO'S SLOT MACHINE SUMMARY

MACHINE NO.	HANDLE	WIN	YIELD	THEOR YIELD
0101	13742.30	3153.65	22.9	17.0
0102	14154.85	3222.40	22.7	17.0
0105	31042.60	3466.00	11.2	9.3
0106	33680.30	3754.70	11.1	9.3
0108	21539.95	4095.65	19.0	18.8
0110	41890.25	5330.80	12.7	11.3
0111	28254.30	2864.35	10.1	10.0
0112	20696.40	2530.15	12.2	12.5*
0115	26025.85	3010.65	11.6	9.8
0116	10239.55	105.70-	1.0-	17.0*
0117	9908.65	2146.00	21.7	17.0
0118	18350.50	2860.85	15.6	12.5
0121	33858.40	3932.40	11.6	9.3
0122	16060.90	2449.30	15.3	17.0*
0124	14259.85	3102.85	21.8	17.0
0125	13350.10	2267.30	17.0	17.0
0126	12660.80	2579.40	20.4	17.0
0128	11261.45	2213.95	19.7	17.0
0129	18789.10	2298.50	12.2	12.2
0131	23677.90	2484.60	10.5	9.3
0132	33694.65	3947.85	11.7	9.3
0133	16012.65	2370.55	14.8	11.3
0135	19311.50	1860.35	9.6	9.8*
0136	12658.55	1714.40	13.5	10.0
0137	15635.65	2307.50	14.8	11.3
0138	11248.40	2369.65	21.1	18.8
0140	11355.00	1767.75	15.6	12.5
0142	9364.35	1284.85	13.7	11.3
0143	19638.05	2413.10	12.3	9.2
0146	9057.10	1728.95	19.1	18.8
0147	11595.35	2275.60	19.6	18.8
0148	12875.30	1941.65	15.1	12.5
0151	6546.70	1149.25	17.6	17.0
0152	9394.70	1913.25	20.4	18.8
0153	7279.95	1357.60	18.6	17.0
0155	12759.10	1966.80	15.4	12.5
0157	6731.20	1264.50	18.8	17.0
0158	5641.55	1112.25	19.7	17.0
0159	17342.30	2528.85	14.6	12.5
0160	22272.65	2782.65	12.5	11.3
TOTALS	683858.70	97715.15		

44 Slot Machine Mania

The "handle" is the total of all coins played in a machine. The "win" is the amount the casino held as profit (also called "hold"), and the "yield" is the casino's win expressed as a percentage of the handle.

On this particular report, the performance of certain machines is less than the expected "theoretical" percentage as noted by an asterisk. You can be assured the slot manager will check those machines carefully. You can also be assured the casino does not freely give these reports out to slot players!

CHAPTER 3

SPECIALTY MACHINES

True slot machines are those which have the typical spinning reels (whether actual or on a video screen), a coin slot, and a handle to pull or button to push. They require no skill to play. All other machines or games are referred to as "specialty machines." In this category you'll find video poker, keno, 21 or blackjack, horse racing, paddle push, craps, roulette, and even bingo. The most widely played of these specialty machines are video poker first and keno second.

other? Why was video poker such an overnight success? Let's look at a few reasons.

First, note that we refer to video poker as a game, not just another slot machine. There's the key. It's no accident that the state authorities refer to "gambling" as "gaming." The implications are that gaming is "recreational" and "respectable." On the other hand "gambling" is a "vice" and is well-known and documented in the court records, in the history books, and in the literature of the world. Since competitive games were first invented (when-ever that may have been), man has used them for pleasure and profit, and preferably both.

The word "game" suggests a respectable recreation requiring a certain degree of skill by the players. There's the second key. Video poker requires a certain skill (not much, but a smattering of intelligence). Any moron can push those buttons at random and possibly hit a winning hand or a royal flush. (Our 3-year old son/grandson was doing just that on a machine at the shop before he even knew what the different cards represented or what a winning hand was. He had a tray full of coins that lasted longer than the bankroll of the average "skillful" player.) By contrast, there is absolutely no skill required to insert a coin and pull the handle of a slot machine. That's not a game, that's gambling, pure and simple. But the video poker player is faced with five cards which can be held or discarded (partially or wholly) to try for a winning hand. He must use his knowledge of what the different possibilities or odds are for drawing the right cards and has a variety of choices.

Satisfaction of winning from slots is not as great as winning at video poker. Having had some influence on the outcome of each hand makes the player feel he has

"earned" his money. How often have you heard someone say that money "earned" is more welcome than a "hand out?" Even if he is dealt a royal flush on the first five cards, he will rationalize his role in the outcome. After all, he knew just which machine to play, didn't he? Or, after he's played a number of hands, he "set up" the machine to deal it out, didn't he?

That feeling of control is another reason. Man invented the machine, so he must be smarter than his creation. Right? He can outsmart that robot in a simple game of draw poker, can't he? Remember that we referred to video poker as a "game of solitaire." Since he is not pitted against another human being, he is "king," and "chance" can be reduced to a minor role in the results. He is not just equal to his opponent, he is superior.

In *Casino Games*, John Gollehon's book that covers each casino game in detail, the author sums up the reasons why players would rather go up against a "friendly" machine, instead of a table full of professional gamblers:

"It's a proven fact that a great many people like to play poker, but are intimidated by the casino's poker parlors. Some people do not wish to join in at a live game against players they don't know. The poker machine is just that . . . a machine. No intimidation. No apprehension. No strangers. And of course, there are no "tells" to read, and no bluffs to worry about. It's poker, but at the player's own pace, in the player's own world."

Other reasons for video poker's rapid popularity can be attributed to its design. It was designed to be a compact machine, with the player *sitting* in a padded chair eye-to-eye with the video screen. He does not have to stand to pull a handle that may give him a sore arm after playing very long. There are buttons to push, not handles to pull. A

departure from the one-arm bandit image. Most of the seats have foot rests, since not everyone is comfortable sitting in chairs of the same height. Also, the manufacturers are very clever; they know that if a player is sitting at a machine, he is not likely to move away as fast if it isn't paying at first. He will merely put in more money or shift to the next seat if it is available. He is less likely to walk away from a machine that he has "primed" with a lot of money.

Besides, you sit down to play a card game at the tables, why not at the machine. Most of the time sitting is more comfortable, but some machines have the round coin trays on the stands below, and you have to straddle that bucket as if you were milking a cow. Of course, that's a minor discomfort if you happen to be milking the machine of its coins.

Other chairs are bolted so close to the machines that you end up with painful creases in your knees from being jammed against the sharp edges of the formica base on which the machines are mounted. And, since casinos use some of the same bases designed for regular slots where players stand, the machines are so close together that you have to be a contortionist to get in and out of the chair. Heaven help you if you drop a coin on the floor. You bump your head on your neighbor's machine, spill your drink, or lose your glasses bending down to retrieve it.

We saw one lady with a handy plastic stick with an adhesive tip on one end who skillfully retrieved her dropped coins without bending over. It was designed to break down into two or three sections, like a fancy pool cue, and was easily carried in her purse. (Someone is sitting on a potential fortune with that invention!)

Realizing these inconveniences, manufacturers are now designing table-top and bar-top machines with padded consoles which are more roomy and comfortable. The giants like the Golden Nugget and Caesars are installing these for Video Poker, Video Keno and Video 21. These enhancements are also directed at pleasing the new "high rollers" to slot playing, who insist on their creature comforts.

The popularity of video poker is spreading to other states where some games of chance are permitted but not all forms of gambling allowed. In July 1985, Montana legalized video poker in licensed liquor establishments with a limit of five machines per location. The IGT Players Edge Machine is being installed with modifications. There is no coin hopper or payout. Instead the machines print out tickets for winnings that are redeemable for cash. Maximum jackpot allowed is \$100. Minnesota and the Dakotas are considering similar legislation because of Montana's successful operation.

The Video Poker Program

The Fortune Coin machine (refined and manufactured by IGT) is still the most popular machine although many versions of video poker by other manufacturers are seen and are making inroads into the sales picture. It was built with a video monitor rather than reels. Below the screen a row of buttons is used to play the game; there are no handles to pull. Under the coin slot, a deal button is pushed for play after inserting one to four coins. If a fifth coin is inserted, the deal is automatic.

Five cards from a standard 52-card deck appear on the screen. Under each card is a hold button so the player can choose which cards to keep before pushing the draw button to replace the cards not held and to obtain, if lucky, a winning hand. The payout for each winning hand is displayed on the award glass above the screen so that the player may determine in advance what to expect. If the second hand turns out to be a winner, the type of hand (two pair, straight, full house, flush, straight flush, etc.) and "winner" are displayed on the screen. As the machine pays, the coins are counted on a meter also displayed on the screen. If the hand is not a winner, "game over" and "insert coin" are displayed and the machine is ready for the next hand. A "cancel" button allows you to change your hold cards before drawing if you change your mind or accidentally push the wrong hold button.

Most machines follow this basic playing format but sometimes the deal, draw and cancel buttons are on the right of the screen rather than below. Some machines also have a "stand" button if you are dealt a winning hand on the first five cards. **Just remember to push either all hold buttons or the stand button before drawing, or you will erase your winning hand.** Some machines have "discard" buttons instead of "hold" buttons. In that case you discard what you want to throw away. If you do not discard specific cards, the machine may give you a whole new hand on the "draw" or it may just count your original five cards as a loser. *Be sure you know which type of machine you are playing and don't push those buttons until you understand what you are doing.*

What most people don't know about these machines is how the cards are dealt from a 52-card deck to prevent the same card showing up on the "draw" after having been

discarded. On most machines, when the program "deals" the first five cards, it also selects five more cards which are placed in a position right behind the ones displayed. Think of it as five stacks of two cards each, the top one face up and the bottom one face down. It is not a stack of five cards or the balance of the deck waiting in the background to be dealt in sequence from the top to replace the cards discarded from left to right as would be the case in a table game.

If the first card from the left is discarded (or not held), the card replacing it on the draw will be the card already selected and waiting behind it. If the second card is retained, the card selected and waiting behind it will not be displayed on the draw, and so on. If the card to the extreme right, for instance, is the only one discarded, the card waiting immediately behind it is the one to be displayed, not the first card from an invisible stack of five cards waiting. After the draw and win or loss, as the case may be, the machine deals the next hand from the 52-card deck.

If you made the wrong choice on the draw and the next hand deals you the cards you would like to have had, don't get upset; *they would not have been the ones you would have received if you had drawn differently.* The process of random selection for the symbols shown on a poker screen is the same as for any other micro-processor controlled slot machine as described in the chapter on how machines work.

Some Unique Variations

Although the 5-card draw video poker machine is the most widely accepted game, you will find some other

interesting machines that you might want to try. Intermark has its version of 5-card draw with a double-down feature. If you have a winning hand, you can double your win if you beat a specific variety of cards displayed on the screen. If you push the "double" button, you will be paid either double your winnings or nothing. Other manufacturers' machines have a "Hi-Lo" choice button to double your money. This is a version of "Red Dog." We have found that most of the double features are designed to increase the casino's wins and the player's losses. The Intermark machines also have a "talking" feature. The voice tells you what your highest hand is on the deal. For the novice, the voice may help him select his cards. For the veteran players, it is a patronizing nuisance. Consequently, there is another button to push which turns off the audio "helper."

Joker's Wild or Dueces Wild are now rather popular varieties of 5-card draw. IGT's "Jokers Wild" is becoming almost as widely played as the straight version. The appeal of this machine is the additional possibilities for winning. You can get five-of-a-kind with the joker which pays the second largest jackpot, even more than a royal flush with a joker. The giant jackpot is the royal flush without the joker and is usually higher than the jackpot for a machine without the joker wild-card feature. On the other hand, Dueces Wild machines pay considerably less for all winning combinations because there are four wild cards instead of one wild joker. The joker or wild cards can be counted as a replacement for any other card to make up the highest winning combination for each hand. See the comparison of pay tables and then look carefully at each machine you play to determine whether or not the smaller return is worth the increased chance for a winning hand.

The newest variation on the market is Bally's "Second Chance" video draw poker. If you have a losing hand, you get a second chance to make it a winner by pushing the second chance button. It deals you a sixth card face down. You place your bet of any number of coins from 1 to the maximum. Your card is then revealed. Now you make your best poker hand out of the six cards showing, win or lose.

For instance, if you have A, K, Q, J, of Spades and 3 of Diamonds for a losing hand, you can try one more time to get the 10 of Spades for the Royal Flush. On other hands you might have a chance for several different winning hands if you have good cards to draw to. If you have a small win on the first draw, you are paid. No second chance to improve your win, as is the case with some Wild Card variations. We predict that this machine will be a great success.

Machines with 7-card stud poker were found in some casinos when video poker became so widely accepted. However, they did not receive enough play to compare with the 5-card draw types. You seldom see more than one or two in a casino now. Perhaps the game was too complicated for the average novice poker player, and he didn't feel like losing a lot of money trying to learn it from a machine. The games also took longer than the 5-card variety and, consequently, did not produce as much revenue.

Many nickel poker machines also require ten coins to be played to win the largest bonus jackpot for a royal flush. You can play from 1 to 10 coins and receive an incrementally increased win respectively, but nine coins played will net only the multiple of winning coins shown for each coin, with the bonus for the 10th coin considerably higher.

Some manufacturers now display the payout table on the screen rather than on a separate glass above the screen,

so that with each coin played, you can see just what the expected return will be.

Another variation allows an almost unlimited number of coins to play to win a jackpot up to a maximum of 10,000 coins per hand.

The most widely accepted variation or refinement is the "credit" feature which builds your winnings in a bank in the machine until you push a "cash-out" or "collect" button. You push a "play credit" button to play one or more coins, or "play max credit" button to play the maximum coins without having to insert coins for each hand. Most new machines are being built with this format. Advantages are that you don't get dirty hands from handling so many coins, you can play faster and make money for the casino faster (or yourself, if you're lucky), and there are less malfunctions and hopper jams for the floormen and mechanics to correct. Also, they are quieter. Players who still like to hear the coins clinking in the tray were suspicious of them at first, but the day will come when they will probably replace all the other types. **The disadvantage to credit play is that too many players never push the "cash-out" button. They simply play off their credit until the marker reads "0." It would appear that "credit" for the slot player is about as dangerous as credit for the table-game players. Remember, the credit shown on your credit meter is your money. Take it!**

A variation of progressive video poker features a bank of machines with three progressive jackpots: The largest for a Royal Flush, second largest for a straight flush and third for four-of-a-kind. It was introduced at the Sands, Las Vegas, in the spring of 1986. We've also seen this type at the El Cortez.

Although they are not "video" poker, there are two

machines we should mention.

One is the "Casino Royal" Flip card machine by Games of Nevada. It actually has five stacks of 52 cards that shuffle before your eyes and simulate the poker table with a green felt field between the machine's glass and the flip cards. The pay table appears on the award glass and is further amplified for multiple coin play on a small video screen beside the award glass. The machine is played just like the video versions and payouts are essentially the same. The problem with the flip card version is that each hand takes at least five times as long to play.

The other variation is "Reel" poker, a true slot machine with all the cards displayed on the five spinning reels. The odds on these machines would be calculated like any other slot machine, not like those on true poker machines.

The comparison of typical payouts for video poker both for regular and wild card types is shown in Figure 5.

The higher payouts for the maximum coins played is called the "incentive award." There are other variations depending upon the particular incentive that a casino may want to offer. For instance, some casinos offer an additional incentive of 4,700 or 4,780 coins for a Royal Flush on a straight poker machine as well as those with Jokers Wild. The incentive is for a jackpot of \$1,175 or \$1,195, just under the \$1,200 that must be recorded and reported to the IRS. Some casinos also offer 20 coins returned instead of 15 for 4-of-a-kind on a Joker's Wild machine. Note also that progressive jackpots always have a smaller payout for the flushes and full houses.

The payouts may differ with the manufacturer, the casino, the location and the denomination. Nickel machines will pay 250 coins (12.50) on the 5th coin for 4-of-a-kind and 500 (25.00) coins for a straight flush.

VIDEO POKER PAY TABLES

	JACKS WILD	DEUCES WILD
ROYAL FLUSH	—	—
FIVE OF A KIND WITH JACKS	—	—
FOUR DEUCES	—	—
ROYAL FLUSH WITH JACKS	—	—
ROYAL FLUSH WITH DEUCES	—	—
FIVE OF A KIND WITH DEUCES	—	—
STRAIGHT FLUSH	—	—
FOUR OF A KIND	—	—
FULL HOUSE	—	—
FLUSH	—	—
STRAIGHT	—	—
THREE OF A KIND	—	—
TWO PAIR	—	—
JACKS OR BETTER	—	—
PERCENTAGES	96	88

figure 5

* JOKERS WILD MACHINES TYPICALLY PAY ON KINGS OR BETTER AMOUNTS SHOWN ARE FOR 1 COIN PLAY PERCENTAGES REFLECT ALL PAYOUTS INCLUDING THE TYPICAL 4000 COIN INCENTIVE AWARD FOR MAXIMUM COINS PLAYED.

Most nickel machines do not return your bet on Jacks or better, although there are some that do. Also, many nickel machines require 10 coins played to win the highest jackpot.

Always study the award table on the machine you play to know what you can expect to win.

A man who regularly played video poker progressive machines at the Frontier Hotel hit two big jackpots within two months. Then, he walked in one night and found his favorite machines gone, replaced by a race and sports book. Two nights later he went back and found the machines and, you guessed it...he hit another one." *Three royal flushes in two months!*

Natalea Marshall, a grandmother from Calgary, Canada, complained of pains in her arms from playing slots. However, her Corvette, won on a quarter video poker machine at the California Hotel in Las Vegas, should help her forget the pain.

Everette Underwood, a pipeline operator hit a video poker machine at the Peppermill Casino, Reno, for \$10,000 after investing \$48 and playing thirty minutes. Two days later he sat at the same bar and hit another video poker machine for \$10,000. He had plunked the first jackpot down on a truck and paid off the balance with the second. The \$10,000 jackpots for a Royal Flush are on special IGT machines which also pay \$25,000 for a "heart" royal flush in sequence (A,K,Q,J,10).

At the Tropicana, Joseph Kaled from California played a video poker progressive and hit a royal flush for \$45,000. Less than four months later he hit another royal for a progressive jackpot of \$41,319.30. Tropicana officials calculated the odds of drawing two progressive royal

flushes in four months (based on his amount of play) as 70,000 to one.

Do you think that's an impressive coincidence? One month earlier, also at the Trop, June Kelp won \$28,836 for a Royal Flush on a \$5 video poker machine. The next day she got another Royal on the same machine for \$20,000. The casino figured the odds of hitting two royal flushes on the same machine in two days (again, based on her play) as 80,000 to one. (The odds of hitting a royal flush are approximately 40,000 to 1, so you can see how they determined her odds.)*

On special quarter machines at the California Hotel in downtown Vegas, a "heart royal flush" in proper sequence is worth \$25,000 or a new car, usually a Mercedes-Benz.

At Sam's Town in Las Vegas, on a special quarter machine a heart royal flush in any sequence wins an extra \$2,500 besides the \$1,000 regular payout. On special half-dollar machines at Sam's, a spade royal flush in any sequence will win a bonus of \$5,000 for a nice total of \$7,000.

The Las Vegas Hilton has two \$5 video poker machines on trial manufactured by P & M of Las Vegas. Maximum jackpot is \$20,000. Sam's Town also has \$5 video poker with three coins maximum to win the Royal Flush for a \$15,000 jackpot.

Video Poker Tournaments

The Royal Flush Club at Sam's Town in Las Vegas runs for a calendar year. Players register and receive a

*The casino's calculation seems much too low, unless the machine was played on a nearly continuous basis. The fact that it was hit on the same machine is incidental for the odds computation, since we can assume all other like machines had the same probability of winning.

numbered card. Each time they hit a royal flush on a video poker machine with the maximum coins played, a floor-man registers the amount on a record card kept by the casino. With the first royal flush on any nickel, quarter, fifty-cent or dollar machine, the player receives a free Sam's Town jacket with a Royal Flush Club patch. The jackets sell for approximately \$40. Quarterly bonuses are paid to the player with the most royal flushes in each of the four denominations (\$500 for nickels, \$1,000 for quarters, \$2,000 for fifty-cents and \$4,000 for dollars.) At the end of the year, additional bonuses were paid for the most royals hit during the year (\$1,000, \$2,000, \$4,000 and \$8,000 respectively). Their super special bonus was for the one member who hit the highest dollar amount in royal flushes for the year, a whopping \$25,000! And all this is at no charge, no entry fee! It's the icing on top of the regular bonus jackpot for getting the royal flush with the maximum coins played. Sam's Town ran out of the first 1,000 jackets in about six weeks and had to reorder more. By far, this was the best promotion for the money! It was a "royal" promotion for sure!

The Frontier Hotel announced a weekly Monday night video poker tournament with a \$40 entry fee in which you can win as much as \$2000 for first place, \$350 for second and \$50 each for 3rd through 13th.

The top annual award given by "Gaming & Wagering Business" for the best slot promotion went to the Trump Casino Hotel, Atlantic City, for their "Are you in?" Poker Slot Tournament. Advertisements featured pictures of "Amarillo Slim" Preston and players got to compete with that real poker champion at the hotel's poker slot machines. Novice and so-so players could take a chance against a professional poker player when they wouldn't

even think of attempting to face him at a real table game. At the slot machines, he's a "reel" opponent but not their "real" opponent which, of course, is the machine. Amarillo Slim is faced with the same odds on the machine as anyone else. His only advantage might be his expertise in holding the most logical cards to draw to, or perhaps, his nerve in throwing away the obvious cards to go for a long shot. That is, "knowing when to hold'em and knowing when to fold'em."

RANK OF POKER HANDS (IN ASCENDING VALUE)

HAND	DESCRIPTION
Jacks-or-Better	Any pair of Jacks, Queens, Kings or Aces.
Two Pair	Two pairs of equal value cards such as two 3's and two 10's.
Three-of-a-Kind	Any three cards of the same value such as three Queens.
Straight	Any five cards in <i>consecutive</i> value, not of the same suit, such as 4 of clubs, 5 of hearts, 6 and 7 of spades, and 8 of diamonds.
Flush	Any five cards of the same suit, such as 8, 10, Jack, King, and ace of hearts.
Full House	Five cards that include a pair and three-of-a-kind, such as a pair of Kings and three 10's.
Four-of-a-Kind	Any four cards of the same value (all four cards of the four different suits) such as the 8 of hearts, diamonds, spades, and clubs.
Straight Flush	Any five cards in consecutive value, <i>of the same suit</i> , such as 2, 3, 4, 5, and 6 of diamonds.
Royal Flush	<i>Only</i> the 10, Jack, Queen, King, and ace of the same suit.

It should be noted that the differences in card value is of no consequence to the poker machine player (except single pair "jacks-or-better"). For example, three 2's pays the same as three aces. As a standard poker rule, the ace may count as either high or low in making a straight, A-2-3-4-5, or 10-J-Q-K-A.

Poker tournaments are not as prevalent as slot tournaments. Probably because they don't have to coax the poker players to keep the machines occupied. We suspect that the many slot tournaments may even be an attempt to keep true slots from being completely replaced by video poker. Even on the Las Vegas Strip, poker machines are being allotted more space than slots.

Keno

Next to regular slots and video poker, the third most popular machine is keno. Based on the live keno game, the most common version has a board of 80 numbers displayed on the screen from which you can choose from two to ten numbers per game, marked on the screen with a light pen (IGT's version) or selected by pushing the numbered buttons below the screen (American Coin Enterprises version). You then push a "start" button and 20 of the numbers are lit with your hits marked with an "X" or check mark. As in live Keno, if your numbers are selected, you win, provided you hit the minimum or more required as indicated on the award glass or the video screen. For example, you must hit four of eight numbers picked to get your money back, with the win increasing for more numbers hit. If you pick ten numbers and hit ten, you get the highest jackpot available, depending upon whether or not you are playing a standard payout or a progressive jackpot machine. You can play one to four coins with the maximum required to win the biggest jackpot. A typical award glass (pay table) follows:

SPOTS MARKED

SPOTS HIT	2	3	4	5	6	7	8	9	10
2	14	2	2	—	—	—	—	—	—
3		40	3	2	2	1	—	—	—
4			100	14	4	2	1	1	—
5				800	92	15	12	3	3
6					1,500	348	112	47	28
7						7,760	1,500	352	140
8							8,000	4,700	1,000
9								9,000	4,800
10									10,000

The table shows the amount won for one coin played. For more than one coin, multiply by the number of coins played to determine amount of expected win. On many machines, the jackpot for ten hits out of ten picks with four coins played is 50,000 coins instead of 40,000 or the progressive jackpot, an incentive feature to encourage you to play the maximum.

If you are not familiar with the game of keno, read all the instructions on the machine carefully. (And on all other types of machines, for that matter.) **Make sure you know whether the award table or the progressive jackpot amount is stated in coins or dollars; there are both types.** For instance, "50,000" could mean 50 thousand dollars or 50,000 nickels, which is only \$2,500! Fifty thousand quarters is only \$12,500. Remember this rule no matter what type of machine you play, whether it be keno, video poker, slots or other specialty machines.

Also, look for the progressive jackpot that offers the highest wins for your investment. Play smart. Some progressive jackpots for slots (not necessarily keno machines) actually start at an amount less than the usual incentive award for maximum coins on a non-progressive machine. *Avoid them, please!* The odds are high enough against you without giving the casino the extra advantage. Plenty of unwary players will soon build it up until it exceeds the incentive award.

For example, we were in a casino recently observing the keno progressives. Along one wall were two banks of nickel machines, separated only by a column. One progressive jackpot displayed \$75,959. The other displayed \$5,360. There were just as many players at each bank of eleven machines with several vacant seats in both. Obviously one had been hit recently. *Why would anyone play*

the same type of game and machine for five grand when he could be investing the same amount for 75 grand? Of course, if you don't play the maximum coins, it doesn't matter.

Some slot players have also confessed that they never play for a jackpot over \$1,200 because they don't want to fill out the IRS reporting form. But most players' intelligence is not even equal to their greed or their foolishness. Some players trying for the five grand were playing four coins each hand. Other players at the 75 grand bank were playing one coin at a time. We went away shaking our heads.

What are the odds of hitting a keno machine jackpot? It's all in the program. Only the manufacturer and the casino know for sure. The theoretical probability of hitting 10 numbers out of 10 should be about 9,000,000 to 1, same as in live keno, where the percentages against the player can exceed 25%! Be extremely careful if you decide to play either the live or electronic game.

Mini-Keno

This new type of keno machine manufactured by Games of Nevada displays only 40 numbers to pick from with a requirement of six hits for six numbers picked with four coins played to win the progressive jackpot. With one coin, six of six wins 1,600 coins. According to the feature glass, you can win 48,000 coins with the maximum coins played. We saw a bank of ten nickel machines linked to a progressive jackpot which on our visit was only \$571. That's considerably less than 48,000 nickels or \$2400. To win the

48,000 coin jackpot you have to match ten out of ten with maximum coins played.

Lots o' luck!

"21" Or Blackjack Machines

These video machines were developed before video poker and were quite popular when introduced, but are being "aced out" by video poker and even keno. Their decline in popularity is probably because of the limited win amounts compared to video poker, keno, and ordinary slot machines. There are no giant progressive jackpots to be won.

The game is essentially the same as the table game with a few extra incentives. Cards are dealt on the video screen in two sections, one for the player and one for the dealer, just as at the table. Rules of play are the same. If you get "21" or under and the dealer's cards add up to less than yours or he goes "bust" by going over 21, you win. After your first two cards are dealt, face up, you can choose to "stand" or take one or more additional "hits" by pressing the appropriate button. After you stand or "bust," the dealer's "hole" card is revealed as in most table games. The machine must hit on 16 and stand on 17. The theoretical odds on this game are the same as at the tables.

In most machines you can bet one to five coins, and if you win, you double your wager (pays even money). Always read all the instructions before you play so you know what to expect. Some differences from the table game and variations in machines to watch for are:

1. Unlike many table games, only one 52-card deck is used. It is "shuffled" by the computer program

sometimes after each hand and sometimes after 30 to 40 cards are dealt. In the latter case, there will be a pause while the machine "shuffles" and that notice will be shown on the screen. In either case, it is virtually impossible to "count cards" to increase your chances of winning. . . and hardly worth the effort.

2. On some machines, pushes (ties) will not return your bet. On other machines you may get your bet back.
3. Most older machines did not allow for double-down bets for 10 or 11 on the first two cards or multiple bets to splits pairs. These features have been added to some of the newer machines.
4. Some of the newer machines have also added insurance and surrender features.
5. Some new machines pay a bonus (1,250 coins) if you draw four aces on a winning hand. Other machines pay extra if you draw six cards and do not go over 21. Some machines pay double for blackjack.
6. Some machines will pay one and a half times your bet for "blackjack" with maximum coins bet.
7. The IGT version allows you to let your winnings "ride" on the next hand, up to a maximum of 400 coins.

The game is not as popular with players looking for instant wealth. For example, the maximum win for a single hand would be 800 coins or 1,600 coins with a double down on 400 coins bet. You won't get rich playing "21." Likewise, the casino's revenue from the machines is not as high as from regular slots, video poker or video keno. For players who want entertainment and who like the game, it can be played with only a few coins for "fun." Quite obviously, electronic blackjack machines are not for serious blackjack players. But for those of you who

might be intimidated by the live game, try the machines. . . although there's really no reason in the world to feel uncomfortable at a \$2 blackjack table. The Blackjack *machines* can be just as risky!

Horse Racing Machines

Like the sport of kings itself, the development of racing slots has an interesting history with a "colorful" cast of characters.

One of the early attempts at developing and marketing a horse racing slot machine was by a person with suspected ties to groups "unacceptable" in the gaming industry.

A video tape racing machine was developed using actual races on cartridge tapes displayed on a video screen. However, with questionable business practices reported, the machine was never approved by the gaming authorities. Also the tape technology was not advanced enough for the demands of a slot machine.

Later, a similar machine appeared under the name "Video Turf," this time under the ownership of Gimbel of Gimbel's department store fame. Mr. Gimbel was also the one who financed the expedition to find the sunken ship "Andrea Doria" and who had the safe recovered and opened on television, in a pool of water with live sharks. However, to our knowledge his machine never left the post.

Other machines have been developed and can be found in many casinos. Using the video disc, the RNG selects a race and displays the actual horse or dog race on the screen. Odds are displayed and eight horses or dogs are paraded on the screen so that you can select your favorite from the

odds displayed and your "knowledge" after viewing the contenders. The machine's display of numbers to choose matches the "colors" or "silks" worn by the contenders in the race, i.e. blue, green, stripes, checks, etc. The race is run and winners paid.

The two most popular of the video disc types are a single player manufactured by P & M Coin and a two-player machine manufactured by Games of Nevada. You will find two or three of these machines in most casinos and hear players screaming at the screen as the horses round the final turn toward the finish line.

The other type of horse racing machine that has become quite popular is "Sigma Derby" developed by Sigma, of course. It is a mechanical machine with five horses that run around a track. Ten or twelve players sit around the track and make their wagers based on the odds displayed for each race. Bets have to be on a Quinella, that is, the horses that finish in first and second position. Highest payout possible is 200 to 1 odds, i.e. 200 coins for each coin bet. Maximum number of coins possible bet is 99 per Quinella.

Sigma Derby is probably Sigma's most popular game. It is often found strategically placed either near the entrance to the casino or near the "live" race and sports book. Since it is a multiple player machine, it requires a license fee for each player position. The machines provide both off-hour action for the live race enthusiasts and rather inexpensive race-track action for players who like the Sport of Kings but have a peasant's purse. *Players who know little about interpreting racing forms or have little familiarity with the strategy of placing bets at the window find it an entertaining change of pace from the one-armed bandits.*

Although Sigma Derby is a mechanical race, the selec-

tion of the races and the control of odds and payouts is by microprocessors and the RNG. So you won't be able to memorize a sequence of races or predict the winner every time. As in all kinds of electronic casino games, the "derby" is no place for serious money.

Pusher Games

This machine goes by different names depending on the manufacturer. IGT's version is called "Whirl-Win." Another manufacturer calls it "Flip-It." It is based on an old arcade-type game which has two or three shelves on which coins lie and are pushed from one shelf to the other by mechanical paddles. Play is by inserting coins in one to four slots. An impeller shoots the inserted coin up on to the shelves or for an instant win into one of five holes or baskets on the wall above the shelves. These catchers are labeled \$1, \$2.50, \$5.00, \$10.00 or \$25.00, the amount of instant win if your coin goes in. If your coin lands on a shelf, it may knock other coins down into the payout slot or land in a spot that allows the paddles to push other coins over the edge and into the payout slot.*

You're not apt to win a waterfall of coins on this game; a few dollars is the most you can hope for and a maximum of \$25.00 per coin played if you scored the highest each time.

Try a few coins in this one for luck. But if you have big bucks in mind, paddle your canoe on by them.

*The coins at the edge are precariously close to falling into the payout slot, and the greedy urge to "bump" the machine (just a little) has tempted us all.

Hold and Draw Bingo

Sometimes called “Bingo Poker” these new machines have been tested in a few casinos, but over the past year none have stayed very long. As the name suggests, it combines the features of both video poker and bingo. Bingo cards are displayed on the screen with a group of numbers “called” and marked. You may choose to hold those numbers that you think will line up for a row of five to “Bingo” and draw replacement numbers for those discarded, as in Poker. Five numbers in a row, horizontally, vertically or diagonally will win. The combination of the two games just doesn’t seem to hold the player’s interest. At least, it didn’t keep us entertained very long.

Bingo Machines

Several types of bingo machines have been developed, and casinos place a few of them near the entrance and exits to bingo parlors for between session play by bingo fans.

Some of these machines display only one board with the “called” numbers appearing after a handle pull or pressed button. Others display four to eight boards for a chance to win more than one bingo per game. Options include playing the same board for several games (as in keno machines) or by changing boards each hand or as often as you wish.

We haven’t seen many of them and they don’t seem to last long on the casino floor either.

Numbers Game

Sigma Game, Inc. placed their “Lucky Numbers” machine in six Las Vegas casinos: Circus Circus, Slots-O-Fun, Palace Station, Gold Coast, Silver Nugget and Golden Nugget. The player can activate one to five reels per play. Each reel contains the figures 0 to 9 twice plus one joker which is wild. A play of one reel only can win seven coins for hitting the number or a joker. Maximum jackpot is 10,000 coins. The 7-1 odds result from three chances to hit a single number out of 23 reel positions.

Games of Nevada has a numbers game out with two different pay tables. If you match particular colors also, you win even more.

These machines may become popular with avid lottery players or with players who are very superstitious about numbers.

Video Craps

Many different versions of dice games have been tried in the slot arena but most have “crapped out.” One of the reasons may be that the rules and multiple ways of wagering are too complicated for the average slot player. Maybe it’s because crap shooters prefer “live” action and there is no substitute for the excitement of cashing in on a hot shooter’s roll.

Status Game Corporation placed its video crap game on field trial at Caesars Palace recently. The game features two screens, one which shows actors playing the game. The other shows the craps layout. When a player pushes the “roll” button the computer-generated dice roll shows on

screen as if it had been rolled by the actors. Players can bet up to 40 quarters. Rules of the game are printed on the console and could actually teach people how to play craps without the intimidation of a live game.

Video Roulette

There's also a similar game for roulette, using an actual wheel protected inside a clear plastic bubble, an electronic table for placing bets, but no dealers. The machine tells you to "place your bets," tells you if you won, and tells you if you lost. It's a wonder it doesn't tell you when to go to the bathroom.

A casino executive told me recently that he's afraid someday the entire casino will be nothing but buttons to push and machines that talk. No dealers, no pit bosses, just buttons and weird voices.

Let's hope not.

CHAPTER 4

Jackpots

Beginner's Luck

On his *first* trip to Las Vegas, Joe Moroski of Ash-tebula hit a Lady Luck progressive quarter machine for \$45,000.

James Kornapes of Texas lined up three wild jokers on a \$25 slot machine at the Flamingo Hilton and won \$25,000. It was his *first* trip to Las Vegas.

Steven Spieldenner, 22, from Ohio went home rich after his *first* trip to Las Vegas. He was attending a convention and had just seen a show in Bally's Celebrity Room. Coming out afterwards, he stopped at a progressive