The Sentinel

IACSP.org
International Association of Certified
Surveillance Professionals

Welcome

Greetings Fellow IACSP Members

Welcome to our first IACSP newsletter. It is our intention to provide our membership with the most up to date surveillance information, tips, techniques and tradecraft to help you perform at the highest level, and to prepare you for your next promotion. Your Board of Director's has worked behind the scenes to gather this information for you and we hope you find it helpful. Your input is greatly desired. We need your input. Please let us know if you have ideas about content, presentation, or if you'd like to assist putting the newsletter together.

Before you get into the newsletter, some announcements:

We are making significant changes to the IACSP Certification Program for the attainment of the Certified Surveillance Professional certification (CSP). As some of you know, we developed the CSP program in 2001 and it hasn't been changed since. The certification now addresses domains of knowledge, expertise, and skills we need to protect our properties from the realities we now face in today's world. These are:

    Domain I: Surveillance Tradecraft
    Domain II: Game Protection
    Domain III: Loss Prevention
    Domain IV: Video Technology and Analytics
    Domain V: Investigations and Reporting
    Domain VI: Emergency Planning and Response
    Domain VII: Risk Management

We have compiled a list of reference materials that can be used to prepare for the certification exam, and will present webinars on a regular basis that will assist in the preparation for the exam, and are also developing a certification preparation handbook to assist candidates in their study. Most of the reference material you probably have in your training library already, or is available from IACSP.

Additionally, we will move the certification exam itself to an online format to allow candidates to take the exam wherever they are. The exam may be challenged at any time. Please check the IACSP website for further information.

The second annual Casino Surveillance Survey has been completed and will be issued soon. Thank you to all of our participants who provided their feedback. I think you will find the survey results very informative for yourself and your organization. Please stay tuned for our upcoming webinar that will discuss the results and how they can be used to identify solutions for your department.

Finally, we are working on the IACSP website and making a number of changes to improve its value for our members. Please bear with us as we go through this process.

Thank you

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Inside this issue

Special points of interest

- *"In the last three decades there have been many improvements in the Surveillance world. Equipment mostly, driven by manufacturers and integrators competing brilliantly to solve the industry's problems."*

- *"As history tends to repeat itself, so do past cheating scams."*

- *"Riverwalk Casino in Vicksburg, Mississippi was the latest casino to report an incident in which a casino employee was caught cheating while on duty."*

- *"Human Trafficking is a $150 billion global industry affecting nearly 25 million people around the world."*

The Future of Surveillance: How Technology is Impacting and Driving Us to a New World   ...IACSP Board of Directors

Lately, the Board of Directors at IACSP have been discussing some of the industry's most significant issues. First, if not foremost, on our minds…the future. In May, several board members participated in a panel discussion via webinar, offering their insights on what we can expect for the future of casino surveillance. In case you missed "The Future of Surveillance: How Technology is Impacting and Driving Us to a New World," we are pleased to follow up on the webinar with this article that includes input from the entire board. We hope each reader takes away something of value and that you'll look forward to more content from IACSP in the coming months!

"Gone are the days of hunt and peck. We now have the technology to use a sniper scope." ~ Darin Hoke

Considering the future of casino surveillance, it's important to remember that fewer surveillance professionals have ever done a tape change every day. Even fewer surveillance veterans will remember a world where you could literally outwalk a PTZ camera if you were trying to follow someone, and that PTZ was housed in a colossal 12" dome!

If for nothing other than demonstrating the agility of generations before, a bit of history is for future generations. Most importantly, because the industry has been through at least four very significant evolutionary changes over the last 100 years, and with each, personnel adapted (sometimes begrudgingly) to integrate new technologies and continue providing service and value to their operation.

"Loss prevention and game protection are more increasingly all built in and around a sleek, sexy internet of things"

It wasn't until the 1980's that the first "video room" came to be, handwritten reports were common well into the 90s, and modern digital surveillance systems have only been around since the early 2000s. Terms like "dataveillance" have been hot buzz topics since 2010. Although many surveillance departments are developing and beginning to implement strategies, we believe that particular future wave has yet to crest.

In the last three decades, there have been many improvements in the surveillance and security world. Equipment, driven mainly by manufacturers and integrators competing brilliantly to solve problems for (us) their customers, has continually added new technologies and integrations to the surveillance toolbox. So, our headspace is the area for change that will ultimately decide the future of casino surveillance, where success or failure will depend largely on our ability to adapt. As they have always been, comfort and complacency will challenge initiative and ingenuity.

The technology will undoubtedly be there whether we use it or not, although the latter is more a question of when than if.

From the perspective of those with even 10+ years in the industry, the future is already upon us. It is overwhelming to see how many companies offer facial recognition, artificial intelligence features, video analytics, virtual VMS platforms, weapons detection/prevention, intrusion notifications, license plate recognition ability, etc. We think you get the point! It can be intimidating because the infrastructure, operation, and training will inevitably evolve.

Sphere Project

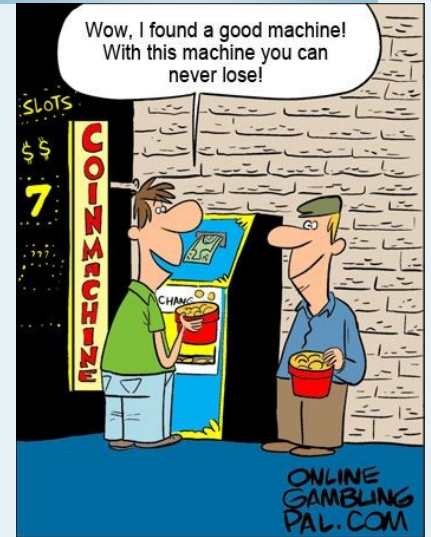# Las Vegas: LVCVA projects $4.5B to be spent on new projects by 2024

The Las Vegas Convention and Visitors Authority is projecting the spending of $4.512 billion to add 7,602 hotel rooms and 791,000 square feet of convention space in Southern Nevada by the end of 2024. Of those 29 projects are completed as planned, the region would have a total room count of 158,059 in two years.

The figures were disclosed in the LVCVA's tourism construction bulletin issued Friday.

The bulletin said 12 projects that added 5,179 rooms and 670,000 square feet of convention space at a total cost of $4.888 billion were completed in 2021.
The list of future projects to be completed by the end of this year includes the reopening of the Palms under its new owners, the San Manuel Band of Mission Indians. That will reintroduce 766 hotel rooms and 190,000 square feet of meetings space to the market in the spring, and 127 rooms at the new Holiday Inn Express at Railroad Pass opening in the fall.

The largest project on the horizon is Fontainebleau Las Vegas on the Strip, with 3,780 hotel rooms and 550,000 square feet of meeting space expected to be added to the city's inventory by the fourth quarter of 2023.

Also coming by the fourth quarter of 2023 is Station Casinos' $750 million neighborhood casino project being built on Durango Drive in southwest Las Vegas, which will add 211 hotel rooms and 21,000 square feet of meeting space.

The $1.9 billion MSG Sphere at The Venetian, a 17,500-seat entertainment venue, is also targeted for completion by the end of 2023.

The largest hotel project scheduled for completion in 2024 is the $850 million, 720-room nongaming Majestic Las Vegas being built on the former Clarion Hotel site across the street from the West Hall of the Las Vegas Convention Center on Convention Center Drive.

Six new properties are planned for completion in 2024. The Element Las Vegas Airport with 119 rooms and a Springhill Suites by Marriott with 170 rooms are due for completion in January of that year.

Due to open in February 2024 are the 284-room, a $100 million Delta Hotels by Marriott, with 10,000 square feet of meeting space; the 322-room, $95 million AC Hotel by Marriott, with 20,000 square feet of meeting space; and the 119-room Element Las Vegas.

Electronic Craps Dealer at Riverwalk Casino Caught Cheating

Cheating in casinos is as old a trick as casinos themselves and while the tools and methods have evolved throughout the years, one element in the scheme remained a constant – the need for insider help.

Manually Changing Electronic Craps Numbers

Riverwalk Casino in Vicksburg, Mississippi was the latest casino to report an incident in which a casino employee was caught cheating while on duty. As a result, the now-former employee, Valinda Jackson, has been indicted with cheating at gambling.

During the incident which took place on March 18, 2022, Jackson used her position as an electronic craps dealer to change the number rolled by manually entering other numbers into the system, incurring financial losses to the casino.

The media reporting the incident, news outlet Vicksburgnews, did not reveal details about any accomplices to Jackson or any particular reason why she manually changed the numbers drawn. There was no info about the size of the loss for the casino, too.

Following the charges, Jackson faces one of two options after obtaining legal counsel: to admit the violations and attempt to reach a deal or to take the case to trial and prove she is innocent and risk a higher sentence.

Also scheduled for completion in the 2024 calendar year is the 527-room, $500 million Dream Las Vegas.

The construction bulletin lists several transportation projects due for completion beyond 2024. The $8 billion Brightline West high-speed rail project, which includes a 65,000-square-foot, two-story Las Vegas station is on the bulletin as is the 29-mile, 51-station Vegas Loop underground transit project by The Boring Co.

Elon Musk's Vegas Loop

The Vegas Loop, a subterranean network of tunnels connecting Las Vegas resorts and landmarks offering point-to-point transit service, is going from concept to reality with the Boring Co. applying for permits from the city and county. Around 50 locations have been identified as possible station sites that would be paid for by the sponsoring resort or attraction. The Boring Co. would build and maintain the system and collect all farebox and advertising revenue under existing plans.

Source: Boring Co. Severiano del Castillo Galvan Las Vegas Review-Journal

Maria Chadwick

Maria Chadwick, 30+ years gaming industry professional. Born and raised in Las Vegas, Chadwick has held several high level management positions with Station Casinos, Wynn Las Vegas and Oneida Nation Enterprises. Chadwick has opened 11 casino properties, most notably Encore Las Vegas, and has been involved in the planning and design phase of Surveillance Room construction, equipment purchase, and camera placement for both existing property expansions and newly built properties.

Chadwick's strengths include; developing staff talent, formulating policies & procedures, identifying areas of vulnerability and communicating any weaknesses to Executive Management to strengthen controls. Chadwick has served as President of the Surveillance Information Network for Las Vegas and is one of the founding members of the International Association of Certified Surveillance Professionals.

In addition, Chadwick was a member of the ASIS International Las Vegas chapter and a member of the Security Magazine advisory board. Chadwick's current role as Director of Surveillance for the Oneida Indian Nation Gaming Commission in New York State has her overseeing several gaming properties including Turning Stone Resort & Casino, Yellow Brick Road Casino, Point Place Casino, The Lake House at Sylvan Beach as well as several remote gaming locations.

"Table-game scams can be expensive but are entirely preventable if an operator is diligent. A recent European roulette could have easily been prevented."

Don't Let Down Your Guard: Protect Your Gaming Equipment   ....Bill Zender

As history tends to repeat itself, so do past cheating scams. Recently, I read an article about a group of cheaters who successfully attacked a single-zero roulette wheel in a casino in Europe. The cheats were able to influence the wheel results and came away with approximately US$30,000 equivalent. Everything went perfectly until they were searched exiting Switzerland when boarder officials found some suspicious items in one of the individual's suitcases. What started the entire turn of events was the cheaters had discovered a weakness in the casinos security and exploited the situation to their advantage. Following is a synopsis of the weakness and scam.

How was the scam used to beat the single-zero roulette game?

The casino had a live single-zero roulette table game connected to several video slot machine terminals throughout the casino. A customer could place a wager remotely through an electronic terminal with the eventual outcome determined by the result on a live table game.

During reconnaissance of the casino, the cheaters noted that the staff would remove the roulette wheel head cover before the dealer would open the game. This left the wheel head open and unattended for several minutes. This process became routine, and the cheaters were able to develop a plan around this weakness.

The cheaters manufactured six "pads" that would fit somewhat unnoticed inside a pre-selected number pocket of

the wheel. These pads were designed to absorb the energy of the roulette ball entering the pocket, causing the ball to stay instead of bouncing out. This would cause the ball to come to rest in the pocket at a higher percentage of the time than normal random events dictate.

I do not know exactly how much of an influence these pads had on the bounce of the ball, but as you will see, it doesn't have to be much of an effect to provide the cheaters with an advantage. Note: Early in my career I saw how similar pads were used and what they looked like when inserted into select wheel head pockets. Once inserted, the pads were nearly impossible to detect especially with the wheel head turning.

From the perspective of those with even 10+ years in the industry, the future is already upon us. It is overwhelming to see how many companies offer facial recognition, artificial intelligence features, video analytics, virtual VMS platforms, weapons detection/prevention, intrusion notifications, license plate recognition ability, etc. We think you get the point! It can be intimidating because the infrastructure, operation, and training will inevitably evolve.

For example, in 2019, Dr. Roger Clark published research showing that the image resolution of the human eye is an astronomical 576 megapixels (MP). To produce an indeed "real life" image (where pixels are not distinguishable), a camera must capture 576 million pixels in an area respective to the observer's field of view. A feat that is being challenged as we speak; one camera manufacturer already boasts the ability to capture still images with 400 MP, and most smartphones are equipped with 8-12 MP cameras built in. An outstanding achievement for a device that we carry in our pockets! A resolution like this isn't available to surveillance departments today, mainly because video recording at that volume and density is not readily available. Still, the market will flood with new CCTV camera options when it is.

But cameras are only one example. Everything in the world aspires to be digital these days; casino games and amenities are no exception. Many casinos are already using cashless wagering or are in some degree of transition, with countless others following close behind. Like the transition from slot coins to tickets, wagering with cash will eventually be as novel as mechanical penny slots in Carson City.

Loss prevention and game protection are increasingly being adopted around a sleek, cashless internet of things, potentially leaving traditional surveillance tactics to merely keep a camera on a server room. In contrast, more and more games, bets, and payouts are transacted electronically. Some might invite the ease of these new games as something new that doesn't have to take a ton of time probably sounds like a win/win. Even brick & mortar casinos will evolve digitally with the rest of the world; it is inevitable. The need for Surveillance Agents watching cameras will change dramatically when most, if not all, of an operation's transactions are entirely electronic.

Whether technologies are adopted or not, perhaps our first consideration of change should be training. The Surveillance role has changed yearly; the thought of only focusing on theft and cheating has become a thing of the past. With a more active role in AML/Compliance, Legal/Risk Management, and Nightclub operations, our duties continue to expand into a different world. We can also see a shift from 'monitor, report, record" to a consulting/support-based function where the data that we generate can be used to support other departments, making Surveillance an integral part of the revenue, safety, and customer service functions, while still meeting the security operation's needs.

We train Surveillance personnel in traditional disciplines like table games and slots; however, those are often some of the most regulated areas of a gaming operation. Despite a variety of departments/observations, they all tend to share widespread methodologies. Coupled with today's workforce comprising an unprecedented 5 generations all trying to work together, successful training programs must adapt to new technologies and practices and accommodate a broad spectrum of technical aptitude. To better serve and protect our houses, we will need to catch up as quickly as possible and ensure that someone (or group of someone) is watching the proverbial horizon for changes we'll need to navigate; and leaders above them that are willing to approve resources that allow for proactive growth.

These new and innovative training programs will delve into patron histories, records, cash flow, and technology progression that could also include threat detection. Surveillance personnel will operate more independently, and the video wall will be used more as an alerting tool. Since video analytics and data mining will be part of the job, finding someone with an IT background, or at least an interest/aptitude such as cyber security or someone familiar with social engineering (OSINT), would be more beneficial. Of course, industry leaders should plan and advocate for better staff pay as all extra duties become a reality.

But wait…the future isn't just for folks at the console. In addition to changes in roles and duties, technology is a continuing driving factor in how we operate. The Surveillance infrastructure and system are ever-evolving, from analytics and servers to

networks. It's safe to say that Surveillance Technicians already perform more like IT Network specialists. The future will undoubtedly bring even more demand for network security, connectivity, and integration, requiring a savvy (ier) Technical division that understands the multifaceted network operation, setup, programming, and maintenance. Technical training and job descriptions will need to reflect these new demands and make an effort to anticipate those to come.

Video storage will continue to expand, and retention for more than 7 days will be standard. Storage solutions will offer full redundancy in every capacity with replication and backup in a smaller footprint. Recording storage will be in one unit for hundreds of cameras. Eventually, video storage architecture will change and need to become cloud-based to support higher-quality cameras. Cloud-based storage will also replace DVDs released as evidence, providing a more secure and auditable chain of custody.

Video analytics will be incorporated into every Surveillance VMS platform from people tracking, investigations, mapping, etc... Still, it will continue vacillating based on vendor perceptions of what Surveillance needs in analytics. Nonetheless, reliance on analytics like a gunshot and other recognition at the camera location will continue to increase, with automatic video retention for incidents alarmed by gunshots, screams, or sudden mass movement of crowds.

The ratio of cameras will change as higher resolution options become available. There will be more fixed cameras than PTZ. We shouldn't be surprised if Surveillance becomes virtual with 3D cameras. Joysticks will be replaced with computer mice or some type of virtual setup. Camera numbers and VMS trees will also replace 3D camera maps and schematics. Virtual Reality (VR) goggles and game controllers might very well be an enticement to applicants in the future, at least until gaming regulations allow Surveillance Agents to work remotely.

There will be a more robust integration of reporting systems to VMS software allowing for easier reporting and logging. Tons of information can be accessed quickly and easily, relying on a device or analytic alerting versus having to actively complete general or special observations.

From brick & mortar casinos to cruise lines (with Surveillance), with emerging technology and processes, Surveillance can expect an increase in government/industry regulations and laws which will directly affect the use of CCTV equipment, including retention, biometrics, facial matching/recognition, privacy concerns, and reporting of incidents.
As the surveillance industry always has, we will continue to meet and exceed these changes, challenges, laws, and regulations; among others, increasing our video retention rates, increasing the use of AI, biometrics, facial matching/recognition, and similar analytics in the CCTV Control Room to augment our manning and to add supporting layers to our current surveillance operations.

Of course, the elephant in the room has changed. For all the advantages Looking into the future, we at IACSP envision a "next generation" video room that will look much like the rooms we have now on the surface. New divisions of Surveillance staff will be created as some personnel focus on traditional expectations like routine observations and reviews, while others might do very little with video. Instead, working almost exclusively with emerging tools and techniques to analyze errant data for indicators that can be forwarded to others for evaluation or investigation.
More dependable (automated) data will be streamlined into algorithms that provide prompts for everything from compliance issues to shift scheduling and assignments. If video walls remain, they will be utilized primarily for video streams selected and displayed by various algorithms programmed to alert the video room of people or activities around the property in real-time. Fewer monitors will be needed as the demand for cameras shifts from quantity to image quality. DVD burners, USB ports, and "review rooms" will slowly disappear through attrition as departments start sharing video on virtual private networks.

To fully engage with the new world of technology, our minds must change from a "catwalk" thought process of cheat and scam catchers to Fraud Investigators in its entirety to ensure relativeness. Surveillance rooms worldwide, some more than others, are already using at least pieces of these futuristic ideas. As availability, experience, and confidence progress, so will the spread of collaboration and innovation. From this perspective, the industry is not only ready for future challenges but is already there!

What is Human Trafficking?

The United Nations defines human trafficking as:

"The recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation."

San Francisco is not immune to the problem, and has been considered a prime destination for human trafficking due to its ports, airports, industry, and rising immigrant populations. Human trafficking is the second largest and fastest growing criminal industry in the world with as many as 27 million individuals living in slavery-like conditions throughout the world.

The 3 most common types of human trafficking are sex trafficking, forced labor, and debt bondage. Forced labor, also known as involuntary servitude, is the biggest sector of trafficking in the world, according to the U.S. Department of State. Debt bondage is another form of human trafficking in which an individual is forced to work in order to pay a debt.

Identify and Assist a Trafficking Victim

Everyone has the potential to discover a human trafficking situation. While the victims may sometimes be kept behind locked doors, they are often hidden right in front of us at, for example, construction sites, restaurants, elder care centers, nail salons, agricultural fields, and hotels. Traffickers' use of coercion – such as threats of deportation and harm to the victim or their family members – is so powerful that even if you reach out to victims, they may be too fearful to accept your help. Knowing indicators of human trafficking and some follow up questions will help you act on your gut feeling that something is wrong and report it.

Human Trafficking Indicators	Questions to Ask
Living with employer	Can you leave your job if you want to?
Poor living conditions	Can you come and go as you please?
Multiple people in cramped space	Have you been hurt or threatened if you tried to leave?
Inability to speak to individual alone	Has your family been threatened?
Answers appear to be scripted and rehearsed	Do you live with your employer?
Employer is holding identity documents	Where do you sleep and eat?
Signs of physical abuse	Are you in debt to your employer?
Submissive or fearful	Do you have your passport/identification? Who has it?
Unpaid or paid very little	
Under 18 and in prostitution	

Human Trafficking. Fight to End Exploitation

Chances are there's going to be nothing visible, nothing that you can see from across the room, or even from up close, that should alert you that a stranger is being trafficked. That may come as a surprise – especially if you have been to a training where you have been taught the 'signs' or indicators of trafficking, such as a person looking disheveled, upset or scared. But as we learn more about how trafficking really works, we are also learning that the best way to help is to pay attention to people you actually know or interact with – your students, your tenants, your children, your patients, your co-workers. It is all about two magic words: Context and proximity.

Who is most vulnerable? "It can happen to anyone," and "it's happening in your backyard," are common in the anti human trafficking field. But it's more complicated than that.

Keeping victims isolated – sometimes physically, sometimes emotionally – is a key method of control in most labor trafficking situations.

Anyone selling sex who is under 18 is legally a trafficking victim. There are a number of racial myths and stereotypes associated with sex trafficking.

Context is key to being able to help understand if what you are seeing is sex or labor trafficking – or something else entirely. People who work in certain industries, for example, may be more likely to spot signs of trafficking that are specific to the way that industry operates. Below are resources specific to either the type of trafficking or to how trafficking situations may intersect with certain kinds of systems and industries. The U.S. National Human Trafficking Hotline does not report to law enforcement in situations involving adults without permission from the person contacting the Trafficking Hotline.

"Human Trafficking is a $150 billion global industry affecting nearly 25 million people around the world. "

Hotels & Motels

Hotels and motels are common venues for both prostitution and sex trafficking, and it can be difficult to distinguish between the two, which is why it is important that concerns about potential trafficking be reported to the U.S. National Human Trafficking Hotline rather than directly to law enforcement, which could lead to arrests. Labor trafficking also takes place, where contract workers such as housekeepers may be exploited. They are also common venues for traveling sales crews to house trafficked workers. Below are some potential indicators of sex and/or labor trafficking that may also be indicators of prostitution.

- Presence of a third party (pimp/trafficker) appearing to be monitoring a hallway or door

- Guest is overly concerned with surveillance cameras or entrance policies
- Someone is dropped off and visits for 30 minutes – 1 hour only – or someone waits for that person on property or in the parking lot
- Abandoned or locked out young adults on property
- Sales flyers left behind that detail suspicious magazine sales tactics

  https://polarisproject.org/recognizing-human-trafficking/

  https://www.state.gov/identify-and-assist-a-trafficking-victim/

The scam breakdown

- Since the six altered numbers were black, the pads were also black in color (numbers 8, 11, 17, 24, 26 & 29). The pads were made from a metallic base since they later reacted to a magnet during removal from the wheel head.
- While one cheater acted as a lookout, another cheater walked up to the exposed and unattended wheel head and quickly placed the pads into the desired numbers.
- Once the roulette wheel was open for gaming activity, the cheaters proceeded to make wagers on the affected numbers via the electronic terminals. It can be assumed that they wagered the numbers individually and in combination such as the center column and possibly "black". Note: The center column contained five of the six affected numbers. Wagering through the remote terminals presented the cheaters with means to stay somewhat obscure and unnoticed.
- After 255 spin decisions the cheaters halted their wagering. Two of the cheaters approached the roulette game; one distracted the dealer while the other removed to six pads. The removal was accomplished very quickly when the second cheater passed a handheld magnet over the wheel head and collected all six metallic based pads.

The cheaters left the casino after cashing the various electronic terminal TITO tickets. The article stated that the cheaters ended up winning approximately US$30,000 equivalent.

How does the alteration of six pockets change the game?

The mathematics behind this incident is straight forward, but at the same time only a guess on my part. The house advantage on a single-zero wheel is 2.70 percent and is calculated in Table 1.

Table 1 – Mathematical House Advantage of a Single-zero Roulette Wheel

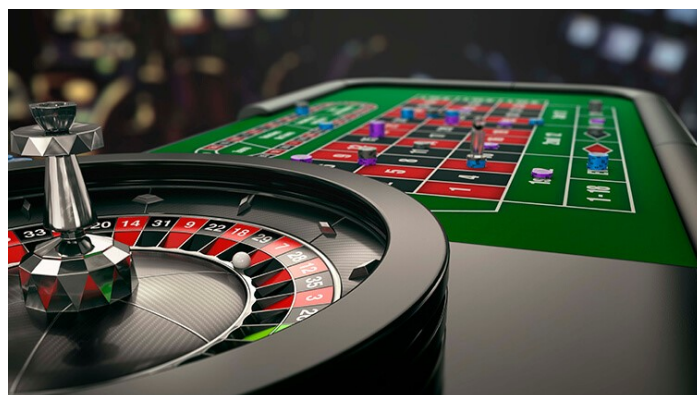| Player Win	35	1/37	0.027027	0.945946
Player Lose	-1	36/37	0.972973	-0.97297
				-0.02703
				2.70%

The margin of profitability on any table game is slight, and any change to the mathematics could reverse this thin margin to a mathematical loss. It is unknown how much the pads influenced the game, but if we assume it changes the per pocket occurrence from 1 in 37 spins to, say, 1.1 in 37, the negative effect is quite serious as seen in Table 2.

Table 2 – Negative House Advantage When Altered (Player Advantage)

Player Win	35	1.1/37	0.02973	1.040541
Player Lose	-1	35.9/37	0.97027	-0.97027
				0.07027
				-7.0%

By altering the outcome to occur 1.1 times every 37 spins the cheaters would have nullified the natural house advantage and created an advantage of their own of about 7.0 percent. While this influence works fine for the cheaters betting each single number, the effect is not great enough to provide them with none or a marginal illegal advantage on other wagers such as Black (0.0 percent) or the center column (2.2 percent). However, if the affect raises the occurrence to 1.2 times every 37 spins, both the "black" and center column (and possibly the "Tier" Quadrant wager) become quite profitable

If the cheaters placing bets on the different remote terminals wagered a combined average of $250 on each of the six effected numbers for the noted 255 spin decisions, they would theoretically "win" the claimed $30,000 based on a 7 percent and do it quite easily.

Conclusion

This scam could have been prevented if management or surveillance had recognized the problem created by removing the wheel head cover before manning the game. Even a few minutes left unprotected can lead to serious problems. Floor supervisors and managers, including surveillance operators should be alert for any breakdown in protection that could reasonably lead to game protection problems.

The next area of concern for casino management is a problem situation that could occur using remote terminals. There needs to be some type of "alert" produced when someone is betting a higher wager on a table game through the remote terminal. The question that needs to be asked is, "Why does someone need to distance themselves from the table and wager remotely? "The solution could be as simple as reducing the maximum amount that can be wagered through remote wagering.

Regardless of the situation, management and game protection personal should be constantly on guard regarding the safeguarding of all equipment used in determining an outcome of the game.

Tech Talk

1080p vs 4k

Resolution numbers are determined by the size of the image the camera records. For example, 1080p means the image the camera can capture can be up to 1080 pixels in height by 1920 pixels in length. Typically, cameras need at least a 2 MP sensor to capture 1080p. When you hear someone mention high-definition, it usually means 1080p or higher, although it might also refer to 720p.

By comparison, 4K is four times as big or as detailed as 1080p. A 4k image equates to one that's 2160 pixels in height paired with 3840 pixels in width. The camera would have to have at least an 8MP sensor to get this level of detail.

There are definitely different parts of taking a photo or video to consider when discussing resolution.

First, let's talk about the surveillance coverage. Resolution doesn't determine field of view, but a 4K camera will show more detail in an image than a 1080p camera.

This field of view difference really comes into effect depending on the location you want to cover. At longer distances, such as a parking lot, a 4K camera can show faces more clearly. Within a home or somewhere at a shorter distance, 1080p can depict faces.

Secondly, 4K captures so much more detail and information than 1080p. This detail can easily be seen in the storage sizes of the videos. Five 4K cameras will require a much higher amount of storage than five 1080p cameras. Hard drives usually aren't the most expensive thing to consider when setting up your system, but the storage requirement is something to consider.

Another thing to consider is the hardware needed to run 4K security cameras over 1080p cameras. These resource needs come down to your monitor as well.

While you don't necessarily need a 4K monitor to view the extra detail in a 4K camera, you'd be wasting most of the advantages. It would be best to have a 4K capable TV or monitor when equipping your system with 4K cameras.

Luckily, 4K TVs aren't that expensive nowadays, although monitors can still be somewhat pricey. You might also need more than one monitor depending on the size of your security system.

To circle back to the extra data captured by 4K cameras, detail can be affected with higher resolution sensors. Light, the main ingredient in capturing a good image, can affect the recordings more. Since 4K captures more data, it can capture more light, which may be harmful in an image. A bright light that shines into the 4K cameras may blow out the image. On the opposite end, low light may be more drastic on 4K compared with 1080p.

The next and possibly most important thing to consider when choosing between a higher or lower-resolution camera system is the cost attached to each. Per camera, a 4K camera will cost more than a 1080p camera. This price difference is due to higher-powered hardware.

This price discrepancy goes back to the location that needs security. A house that only requires one camera in the backyard will be less expensive paired with the 1080p cameras system vs. the 4K.

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